DCR-TRV230/TRV330/TRV530

RMT-814

SERVICE MANUAL

Self Diagnosis
Supported model

Ver 1.2 2005. 06

Digital 8

Digital Handycam

InfoLITHIUM™ M SERIES

MEMORY STICK

Photo : DCR-TRV530
RMT-814

US Model
Canadian Model
E Model
Hong Kong Model
Korea Model
DCR-TRV230/TRV330/TRV530
Tourist Model
DCR-TRV330/TRV530
Argentina Model
DCR-TRV230/TRV530
Brazilian Model
DCR-TRV330

M2000 MECHANISM

For MECHANISM ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL Ⅸ M2000 MECHANISM " (9-929-861-11).

SPECIFICATIONS

Video camera recorder

System

Video recording system
2 rotary heads
Helical scaning system

Audio recording system
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)

Video signal
NTSC color, EIA standards

Recommended cassette
Hi8/Digital8 video cassette

Recording/playback time (using 120 min. Hi8 video cassette)
SP mode: 1 hour
LP mode: 1 hour and 30 minuites

Fastforward/rewind time (using 120 min. Hi8 video cassette)
Approx. 5 min.

Viewfinder
Electric Viewfinder, Monochrome

Image device
3 mm (1/6 type CCD)
(Charge Coupled Device)
Approx. 460 000 pixels
(Effective: Approx. 290 000 pixels)

Lens
Combined power zoom lens
Filter diameter 37 mm (1 1/2 in.)
25× (Optical), 700× (Digital)

Focal length
2.4 - 60 mm (1/8 - 2 3/8 in.)
When converted to a 35 mm still camera
42 - 1 050 mm (1 11/16 - 41 3/8 in.)

Color temperature
Auto

Minimum illumination
4 lx (lux) (F 1.6)
0 lx (lux) (in the NightShot mode)*
* Objects unable to be seen due to the dark can be shot with infrared lighting.

Input/output connectors

S video input/output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced
Chrominance signal: 0.286 Vp-p, 75 Ω (ohms), unbalanced

Audio/Video input/output
AV MINIJACK, 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative
327 mV, (at output impedance more than 47 kΩ (kilohms))
Output impedance with less than 2.2 kΩ(kilohms)/Stereo minijack (ø 3.5 mm)
Input impedance more than 47 kΩ (kilohms)

Headphone jack
Stereo minijack (ø 3.5 mm)

USB jack (DCR-TRV330/TRV530)
mini-B

LANC ⓛ jack
Stereo mini-minijack (ø 2.5 mm)

MIC jack
Stereo minijack (ø 3.5 mm)

i DV input/output
4-pin connector

LCD screen

Picture
DCR-TRV230/TRV330:
6.2 cm (2.5 type)
50.3 × 37.4 mm (2 × 1 1/2 in.)
DCR-TRV530:
8.8 cm (3.5 type)
72.2 × 50.4 mm (2 7/8 × 2 in.)

Total dot number
DCR-TRV230/TRV330
61 600 (280 × 220)
DCR-TRV530
123 200 (560 × 220)

General

Power requirements
7.2 V (battery pack)
8.4 V (AC power adaptor)

Average power consumption (when using the battery pack)
During camera recording using LCD
DCR-TRV230/TRV330: 3.9 W
DCR-TRV530: 4.2 W
Viewfinder
3.0 W

Operating temperature
0 °C to 40 °C (32 °F to 104 °F)

Recommended charging temperature
10 °C to 30 °C (50 °F to 86 °F)

Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)

Dimensions (Approx.)
85 × 102 × 205.5 mm
(3 3/8 × 4 1/8 × 8 1/8 in.) (w/h/d)

Mass (approx.)
DCR-TRV230:
880 g (1 lb 15 oz)
DCR-TRV330:
900 g (1 lb 15 oz)
DCR-TRV530:
930 g (2 lb 0 oz)
excluding the battery pack, cassette and shoulder strap
DCR-TRV230:
1 020 g (2 lb 3 oz)
DCR-TRV330:
1 040 g (2 lb 4 oz)
DCR-TRV530:
1 070 g (2 lb 5 oz)
including the battery pack NP-FM30, 120min. Hi8 cassette, and shoulder strap

— Continued on next page —

DIGITAL VIDEO CAMERA RECORDER

SONY®

AC power adaptor

Power requirements
100 - 240 V AC, 50/60 Hz
Power consumption
23 W
Output voltage
DC OUT: 8.4 V, 1.5 A in the operating mode
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (approx.)
125 × 39 × 62 mm
(5 × 1 9/16 × 2 1/2 in.) (w/h/d)
excluding projecting parts
Mass (approx.)
280 g (9.8 oz)
excluding power cord

Battery pack

Maximun output voltage
DC 8.4 V
Mean output voltage
DC 7.2 V
Capacity
5.0 Wh (700 mAh)
Operating temperatur
0 °C to 40 °C (32 °F to 104 °F)
Dimensions (approx.)
38.2 × 20.5 × 55.6 mm
(1 9/16 × 13/16 × 2 1/4 in.)
(w/h/d)
Mass (approx.)
65 g (2.3 oz)
Type
Lithium ion

"Memory Stick"

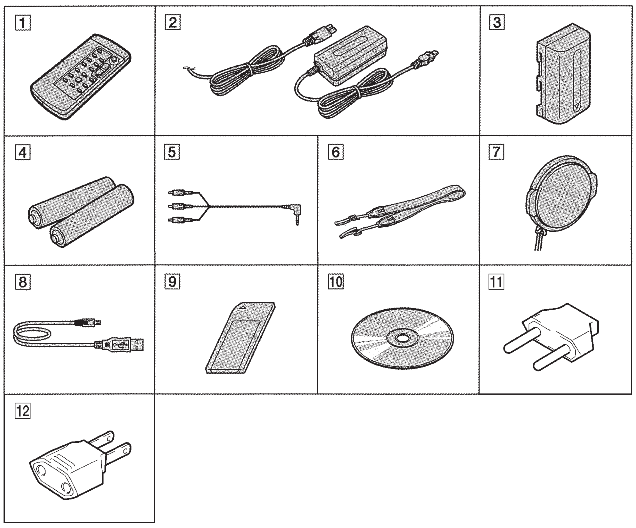
(DCR-TRV330/TRV530 only)

Memory
Flash memory
4MB: MSA-4A
Operating voltage
2.7 - 3.6 V
Power consumption
Approx. 45 mA in the operating mode
Approx. 130 μA in the standby mode
Dimensions (approx.)
50 × 2.8 × 21.5 mm
(2 × 1/8 × 7/8 in.) (w/h/d)
Mass (approx.)
4 g (0.14 oz)

Design and specifications are subject to change without notice.

• SUPPLIED ACCESSORIES

Make sure that the following accessories are supplied with your camcorder.



1 **Wireless Remote Commander** (1)

2 **AC-L10A/L10B/L10C AC power adaptor** (1), **Power cord** (1)

3 **NP-FM30 battery pack** (1)

4 **Size AA (R6) battery for Remote Commander** (2)

5 **A/V connecting cable** (1)

6 **Shoulder strap** (1)

7 **Lens cap** (1)

8 **USB cable** (1)
DCR-TRV330/TRV530 only

9 **"Memory Stick"** (1)
DCR-TRV330/TRV530 only

10 **CD-ROM (SPVD-004 USB Driver)** (1)
DCR-TRV330/TRV530 only

11 **2-pin conversion adaptor** (1)
DCR-TRV330: JE/TRV530: JE

12 **2-pin conversion adaptor** (1)
DCR-TRV230: E,HK/TRV330: E,HK/TRV530: E,HK,AR

- Abbreviation
  HK : Hong Kong model
  JE : Tourist model
  AR : Argentina model

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Table for difference of function

Model		DCR-TRV230	DCR-TRV330	DCR-TRV530	Remark
Destination		US,CND,E,HK,KR,AR	US,CND,E,HK,KR,JE,BR	US,CND,E,HK,KR,JE,AR	
LCD	size	2.5 inch		3.5 inch	
	pixel	61K		123K	
	type	TYPE SH		TYPE SO	
Memory stick		××	○		○: with PC-082 board
Intelligent accessory shoe		○	○ (P)		○ (P): Supports printer
DIGITAL IN/OUT (USB)		××	○		○: with PC-082 board
Self-timer recording		××	○		○: Select of menu
Board	CD-	CD-292		CD-315	CD-292: 2.5 inch LCD CD-315: 3.5 inch LCD
	CF-	CF-079		CF-080	CF-079: 2.5 inch LCD CF-080: 3.5 inch LCD
	LB-	LB-068		LB-070	LB-068: 2.5 inch LCD LB-070: 3.5 inch LCD
	SI-	SI-028		SI-029	SI-028: 2.5 inch LCD SI-029: 3.5 inch LCD
	FU-	FU-150		FU-154	FU-150: 2.5 inch LCD FU-154: 3.5 inch LCD
	PC-	××	PC-082		With Memory stick slot & USB connector
	PD-	PD-138		PD-139	PD-138: 2.5 inch LCD PD-139: 3.5 inch LCD

- Abbreviation

CND : Canadian model
HK : Hong Kong model
KR : Korea model
JE : Tourist model
BR : Brazilian model
AR : Argentina model

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* Optical axis frame and color reproduction frame are shown on pages 294 and 295.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

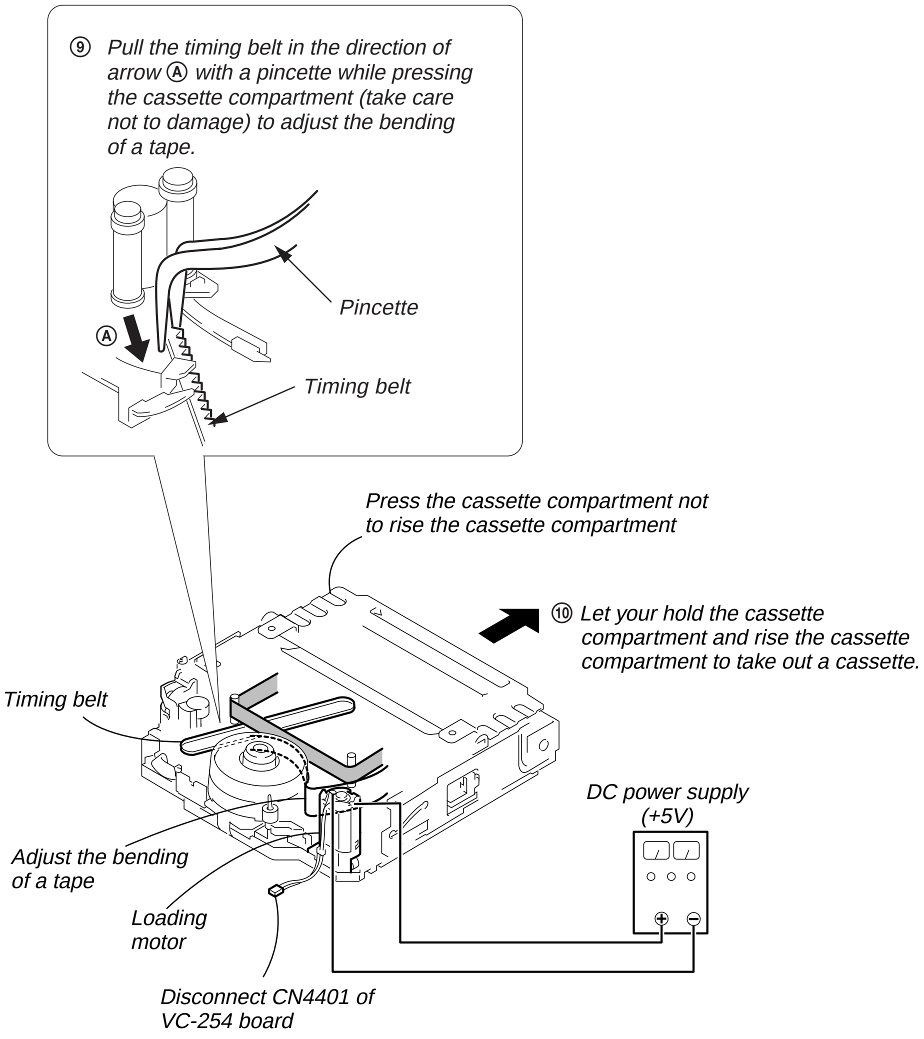
In this unit, about 10 seconds after power is supplied (8.4V) to the battery terminal using the service power code (J-6082-223-A), the power is shut off so that the unit cannot operate.
These following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.
Use the DC IN terminal. (Use the AC power adaptor.)

Method 2.
Connect the adjustment remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the HOLD switch to the “ADJ” side.

2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to 2-3. to remove the front panel section.
② Refer to 2-4. to remove the cabinet (Upper) assembly.
③ Refer to 2-4. to remove the cabinet (R) assembly.
④ Refer to 2-9. to remove the memory stick connector assembly. (DCR-TRV330/TRV530)
⑤ Refer to 2-10. to remove the battery panel section.
⑥ Refer to 2-11. and 2-12. to remove the cabinet (L) section. (Include the CS frame assembly and control switch block (SS-1380).)
⑦ Disconnect CN4401 (2P) of VC-254 board.
⑧ Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette compertment.



⑨ Pull the timing belt in the direction of arrow Ⓐ with a pincette while pressing the cassette compartment (take care not to damage) to adjust the bending of a tape.

Press the cassette compartment not to rise the cassette compartment

⑩ Let your hold the cassette compartment and rise the cassette compartment to take out a cassette.

SELF-DIAGNOSIS FUNCTION

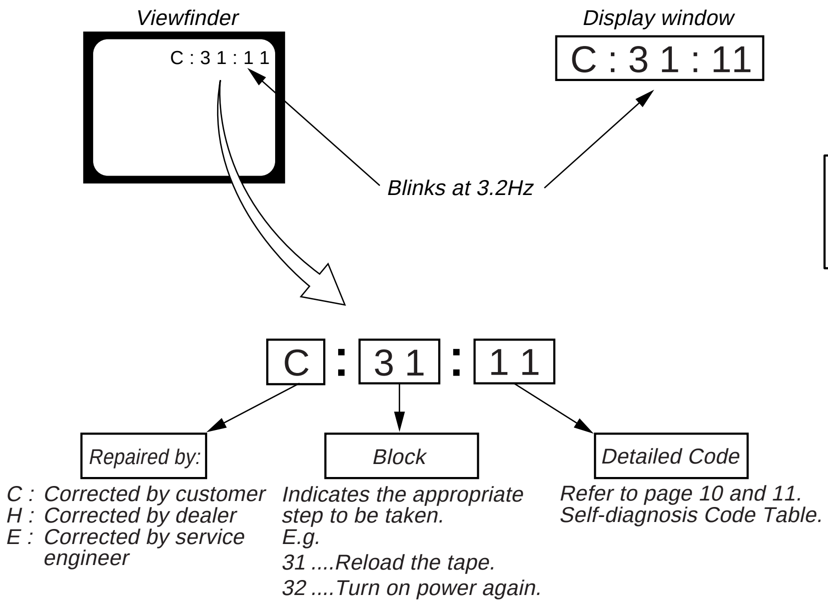
1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or Display window what to do. This function consists of two display; self-diagnosis display and service mode display.

Details of the self-diagnosis functions are provided in the Instruction manual.

2. Self-diagnosis Display

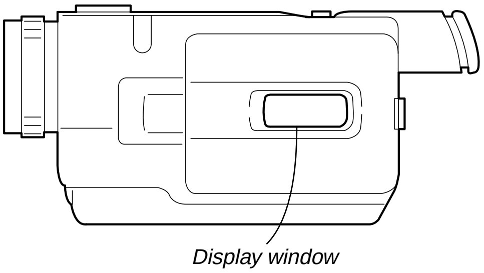
When problems occur while the unit is operating, the counter of the viewfinder or Display window shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.



C : Corrected by customer
H : Corrected by dealer
E : Corrected by service engineer

Indicates the appropriate step to be taken.
E.g.
31 ....Reload the tape.
32 ....Turn on power again.

Refer to page 10 and 11.
Self-diagnosis Code Table.

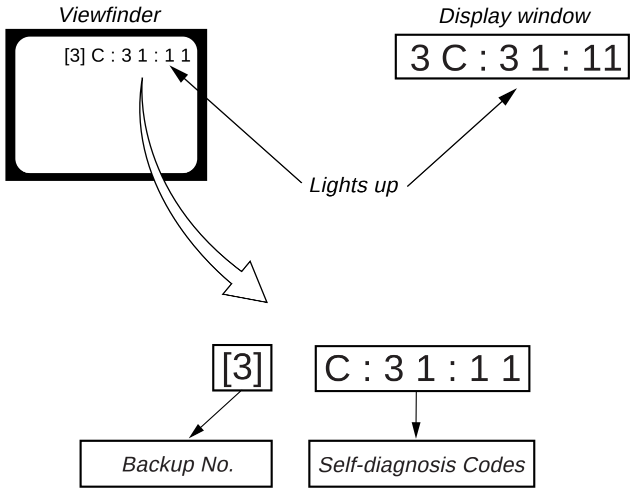


3. Service Mode Display

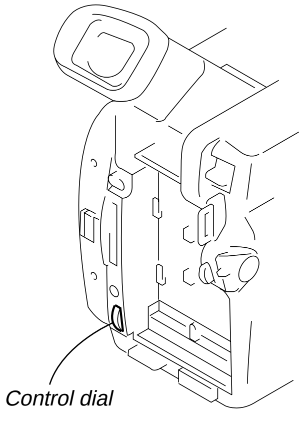
The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the “STOP” key, set the switch from OFF to “VTR or PLAYER”, and continue pressing the “STOP” key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.



Order of previous errors



3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1] : Occurred first time
[2] : Occurred second time
[3] : Occurred third time
[4] : Occurred fourth time
[5] : Occurred fifth time
[6] : Occurred the last time

3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The “self-diagnosis display” data will be backed up by the coin-type lithium battery (CF-079/080 board BT101). When the CF-079/080 board is disconnected, the “self-diagnosis display” data will be lost by initialization.

4. Self-diagnosis Code Table

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
C	0 4	0 0	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	2 1	0 0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2 2	0 0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3 1	1 0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	1 1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	2 0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3 1	2 1	S reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3 1	2 2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	3 0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3 1	3 1	FG fault during normal capstan operations.	Load the tape again, and perform operations from the beginning.
C	3 1	4 0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3 1	4 1	PG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3 1	4 2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3 1	4 3	PG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3 1	4 4	Phase fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3 2	1 0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	1 1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 1	S reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	3 0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	3 1	FG fault during normal capstan operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 0	FG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 1	PG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 2	FG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 3	PG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 4	Phase fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

Self-diagnosis Code						Symptom/State	Correction
Repaired by:	Block Function		Detailed Code				
E	6	1	0	0		Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑬ of CN1551 of VC-254 board) when focusing is performed when the control dial is rotated in the focus manual mode and the focus motor drive circuit (IC1553 of VC-254 board) when the focusing is not performed.
E	6	1	1	0		Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ⑫ of CN1551 of VC-254 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC1553 of VC-254 board) when zooming is not performed.
E	6	2	0	0		Handshake correction function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE301 of SE-028/029 board) peripheral circuits.
E	6	2	0	1		Handshake correction function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE302 of SE-028/029 board) peripheral circuits.

SECTION 1
GENERAL

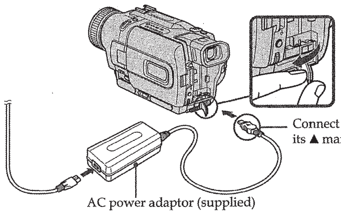
This section is extracted from instruction manual.

Quick Start Guide

This chapter introduces you to the basic features of your camcorder. See the page in parentheses "( )" for more information.

1 Connecting the power cord (p. 16)

Use the battery pack when using your camcorder outdoors (p. 11).



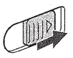
Open the DC IN jack cover.

Connect the plug with its ▲ mark facing up.

AC power adaptor (supplied)

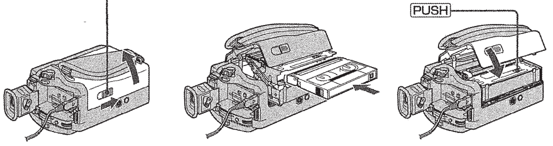
2 Inserting a cassette (p. 18)

❶ Slide OPEN/EJECT in the direction of the arrow and open the lid.



❷ Insert the cassette in a straight line deeply into the cassette compartment with the window facing out.
Push the middle portion of the back of the cassette to insert.

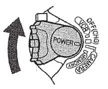
❸ Close the cassette compartment by pressing the PUSH mark on the cassette compartment.
After the cassette compartment goes down completely, close the lid until it clicks.

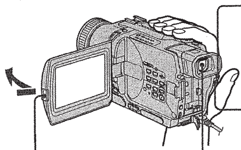


3 Recording a picture (p. 19)

❶ Remove the lens cap.

❷ Set the POWER switch to CAMERA while pressing the small green button.





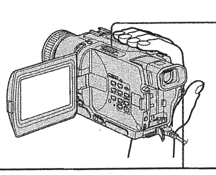
❸ Open the LCD panel while pressing OPEN. The picture appears on the LCD screen.

❹ Press START/STOP. Your camcorder starts recording. To stop recording, press START/STOP button again.

Viewfinder
When the LCD panel is closed, use the viewfinder placing your eye against its eyecup.
The picture in the viewfinder is black and white.

When you purchase your camcorder, the clock setting is set to off. If you want to record the date and time for a picture, set the clock setting before recording (p. 17).

4 Monitoring the playback picture on the LCD screen (p. 27)



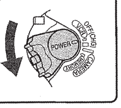
❷ Press ◀◀ to rewind the tape.

REW ◀◀

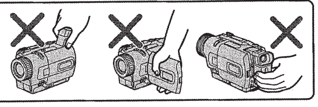
❸ Press ▶ to start playback.

PLAY ▷

❶ Set the POWER switch to VCR while pressing the small green button.



Note
Do not pick up your camcorder by holding the viewfinder, the LCD panel, or the battery pack.



— Getting started —

Using this manual

The instructions in this manual are for the three models listed in the table below. Before you start reading this manual and operating your camcorder, check the model number by looking at the bottom of your camcorder. The DCR-TRV530 is the model used for illustration purposes. Otherwise, the model name is indicated in the illustrations. Any differences in operation are clearly indicated in the text, for example, "DCR-TRV530 only."
As you read through this manual, buttons and settings on your camcorder are shown in capital letters.
e.g. Set the POWER switch to CAMERA.
When you carry out an operation, you can hear a beep sound to indicate that the operation is being carried out.

Type of difference

DCR-	TRV230	TRV330	TRV530
MEMORY mark* (on the POWER switch)	—	●	●
Self-timer	—	●	●
Ψ (USB) jack	—	●	●
LCD screen	6.2 cm (2.5 type)	6.2 cm (2.5 type)	8.8 cm (3.5 type)

● Provided
— Not provided

* The models with MEMORY marked on the POWER switch is provided with memory functions. See page 88 for details.

Before using your camcorder

With your digital camcorder, you can use Hi8 Hi8/Digital8 D8 video cassettes. Your camcorder records and plays back pictures in the Digital8 D8 system. Also, your camcorder plays back tapes recorded in the Hi8 Hi8/standard 8 8 (analog) system. You, however, cannot use the functions in "Advanced Playback Operations" on page 53 to 59 for playback in the Hi8 Hi8/standard 8 8 system. To enable smooth transition, we recommend that you do not mix pictures recorded in the Hi8 Hi8/standard 8 8 with the Digital8 D8 system on a tape.

Note on TV color systems

TV color systems differ from country to country. To view your recordings on a TV, you need an NTSC system-based TV.

Copyright precautions

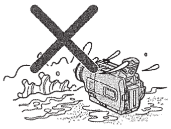
Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Precautions on camcorder care

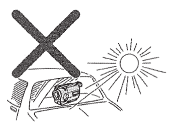
Lens and LCD screen/finder (on mounted models only)

- **The LCD screen and the finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the finder. These points are normal in the manufacturing process and do not affect the recording in any way.**
- Do not let your camcorder get wet. Keep your camcorder away from rain and sea water. Letting your camcorder get wet may cause your camcorder to malfunction. Sometimes this malfunction cannot be repaired **[a]**.
- Never leave your camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight **[b]**.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions **[c]**.
- Do not directly shoot the sun. Doing so might cause your camcorder to malfunction. Take pictures of the sun in low light conditions such as dusk **[d]**.

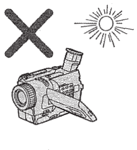
[a]



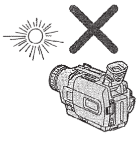
[b]



[c]

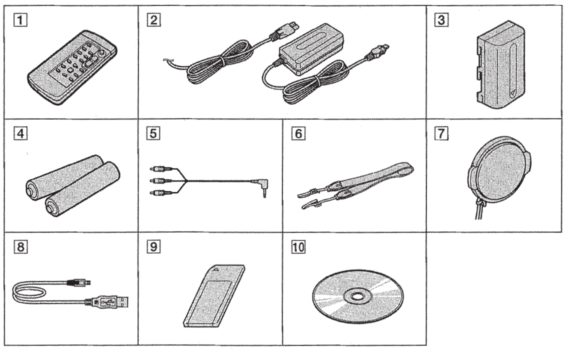


[d]



Checking supplied accessories

Make sure that the following accessories are supplied with your camcorder.



1. **Wireless Remote Commander** (1) (p. 152)
2. **AC-L10A/L10B/L10C AC power adaptor** (1), **Power cord** (1) (p. 12)
3. **NP-FM30 battery pack** (1) (p. 11, 12)
4. **Size AA (R6) battery for Remote Commander** (2) (p. 152)
5. **A/V connecting cable** (1) (p. 31)
6. **Shoulder strap** (1) (p. 146)
7. **Lens cap** (1) (p. 19)
8. **USB cable** (1) (p. 111) DCR-TRV330/TRV530 only
9. **"Memory Stick"** (1) (p. 88) DCR-TRV330/TRV530 only
10. **CD-ROM (SPVD-004 USB Driver)** (1) (p. 111) DCR-TRV330/TRV530 only

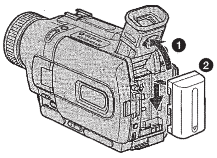
Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, storage media, etc.

Step 1 Preparing the power supply

Installing the battery pack

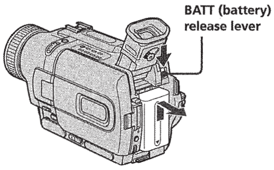
We recommend using the battery pack when you use your camcorder outdoors.

(1) Lift up the viewfinder.
(2) Slide the battery pack down until it clicks.



To remove the battery pack

(1) Lift up the viewfinder.
(2) Slide the battery pack out in the direction of the arrow while pressing BATT (battery) release lever down.



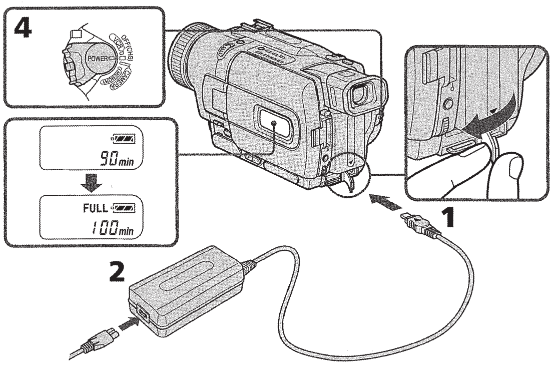
If you install the large capacity battery pack
If you install the NP-FM70/FM90/FM91 battery pack on your camcorder, extend its viewfinder.

Charging the battery pack

Use the battery pack after charging it for your camcorder.
Your camcorder operates only with the "InfoLITHIUM" battery pack (M series).
See page 135 for details of "InfoLITHIUM" battery pack.

(1) Open the DC IN jack cover and connect the AC power adaptor supplied with your camcorder to the DC IN jack with the plug's ▲ mark facing up.
(2) Connect the power cord to the AC power adaptor.
(3) Connect the power cord to a wall outlet.
(4) Set the POWER switch to OFF (CHG). Charging begins. The remaining battery time is indicated in minutes on the display window.

When the remaining battery indicator changes to ▬, **normal charge** is completed. To fully charge the battery **(full charge)**, leave the battery pack attached after normal charge is completed until FULL appears on the display window. Fully charging the battery allows you to use the battery longer than usual.



The number in the illustration of the display window may differ from that on your camcorder.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camcorder.

Notes
- Prevent metallic objects from coming into contact with the metal parts of the DC plug of the AC power adaptor. This may cause a short-circuit, damaging the AC power adaptor.
- Keep the battery pack dry.
- When the battery pack is not to be used for a long time, charge the battery pack fully, and then use it until it fully discharges again. Do this once a year. Keep the battery pack in a cool place.

When the battery pack is charged fully
The LCD backlight of the display window is turned off.

Remaining battery time indicator
The remaining battery time indicator in the display window roughly indicates the recording time with the viewfinder.

Until your camcorder calculates the actual remaining battery time
"– – – – min" appears in the display window.

While charging the battery pack, no indicator appears or the indicator flashes in the display window in the following cases:
– The battery pack is not installed correctly.
– Something is wrong with the battery pack.

If the power may go off although the battery remaining indicator indicates that the battery pack has enough power to operate
Charge the battery pack fully again so that the indication on the battery remaining indicator is correct.

When you use the AC power adaptor
Place the AC power adaptor near a wall outlet. If any trouble occurs with this unit, disconnect the plug from the wall outlet as soon as possible to cut off the power.

What is "InfoLITHIUM"?
The "InfoLITHIUM" is a lithium ion battery pack which can exchange data such as battery consumption with compatible electronic equipment. This unit is compatible with the "InfoLITHIUM" battery pack (M series). Your camcorder operates only with the "InfoLITHIUM" battery. "InfoLITHIUM" M series battery packs have the ⓘ InfoLITHIUM M SERIES mark. "InfoLITHIUM" is a trademark of Sony Corporation.

Charging time

Battery pack	Full charge (Normal charge)
NP-FM30 (supplied)	145 (85)
NP-FM50	150 (90)
NP-FM70	240 (180)
NP-FM90	330 (270)
NP-FM91	360 (300)

Approximate number of minutes to charge an empty battery pack at 25 °C (77 °F)

Recording time

DCR-TRV230/TRV330

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous*	Typical**	Continuous*	Typical**
NP-FM30 (supplied)	100	55	75	40
NP-FM50	165	95	125	70
NP-FM70	345	200	265	150
NP-FM90	520	300	400	230
NP-FM91	605	350	465	265

DCR-TRV530

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous*	Typical**	Continuous*	Typical**
NP-FM30 (supplied)	100	60	70	40
NP-FM50	165	105	115	65
NP-FM70	345	220	245	140
NP-FM90	520	335	370	210
NP-FM91	605	390	430	245

Approximate number of minutes when you use a fully charged battery

* Approximate continuous recording time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.

** Approximate number of minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

Playing time

DCR-TRV230/TRV330

Battery pack	Playing time on LCD screen	Playing time with LCD closed
NP-FM30 (supplied)	75	100
NP-FM50	125	165
NP-FM70	265	345
NP-FM90	400	520
NP-FM91	465	605

DCR-TRV530

Battery pack	Playing time on LCD screen	Playing time with LCD closed
NP-FM30 (supplied)	70	100
NP-FM50	115	165
NP-FM70	245	345
NP-FM90	370	520
NP-FM91	430	605

Approximate number of minutes when you use a fully charged battery

Approximate continuous playing time at 25 °C (77 °F). The battery life will be shorter if you use your camcorder in a cold environment.

The recording and playing times of a normally charged battery are about 90 % of those of a fully charged battery.

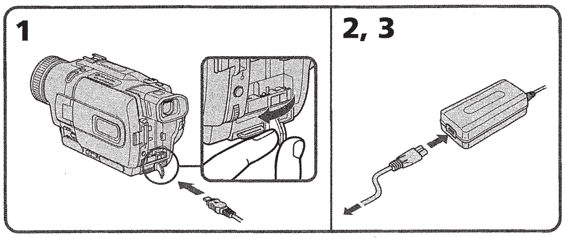
Note

The table shows the playing time for tapes recorded in the Digital8 Ð system. The playing time of tapes recorded in the Hi8/standard 8 system is reduced by about 20 %.

Connecting to a wall outlet

When you use your camcorder for a long time, we recommend that you power it from a wall outlet using the AC power adaptor.

(1) Open the DC IN jack cover, and connect the AC power adaptor to the DC IN jack on your camcorder with the plug's ▲ mark facing up.
(2) Connect the power cord to the AC power adaptor.
(3) Connect the power cord to a wall outlet.



PRECAUTION

The set is not disconnected from the AC power source (house current) as long as it is connected to the wall outlet, even if the set itself has been turned off.

Notes

- The AC power adaptor can supply power even if the battery pack is attached to your camcorder.
- The DC IN jack has "source priority". This means that the battery pack cannot supply any power if the power cord is connected to the DC IN jack, even when the power cord is not plugged into a wall outlet.

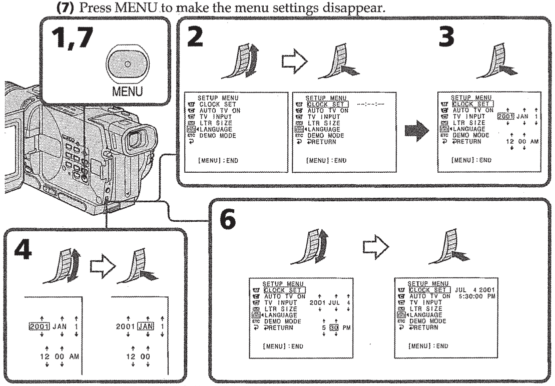
Using a car battery

Use Sony DC Adaptor/Charger (optional).

Step 2 Setting the date and time

Set the date and time settings when you use your camcorder for the first time. "CLOCK SET" will be displayed each time that you set the POWER switch to CAMERA/MEMORY (DCR-TRV330/TRV530 only) unless you set the date and time settings.
If you do not use your camcorder for about half a year, the date and time settings may be released (bars may appear) because the manganese-lithium battery installed in your camcorder will have been discharged (p. 141).
First, set the year, then the month, the day, the hour and then the minute.

(1) Set the POWER switch to CAMERA or MEMORY (DCR-TRV330/TRV530 only), and then press MENU to display the menu settings.
(2) Turn the SEL/PUSH EXEC dial to select ▤, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select CLOCK SET, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to adjust the desired year, then press the dial.
(5) Set the month, day and hour by turning the SEL/PUSH EXEC dial and pressing the dial.
(6) Set the minute by turning the SEL/PUSH EXEC dial and pressing the dial by the time signal. The clock starts to move.
(7) Press MENU to make the menu settings disappear.



The year changes as follows:

1995 ← · · · · → 2001 ← · · · · → 2079

If you do not set the date and time

"--- -- ----" "--:--:--" is recorded on the tape and the "Memory Stick". (DCR-TRV330/TRV530 only)

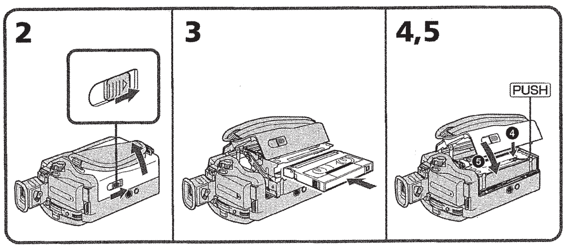
Note on the time indicator

The internal clock of your camcorder operates on a 12-hour cycle.
- 12:00 AM stands for midnight.
- 12:00 PM stands for noon.

Step 3 Inserting a cassette

We recommend using Hi8 **Hi8**/Digital8 video cassettes.

(1) Prepare the power supply (p. 11).
(2) Slide OPEN/EJECT in the direction of the arrow and open the lid.
The cassette compartment automatically lifts up and opens.
(3) Insert the cassette in a straight line deeply into the cassette compartment with the window facing out.
Push the middle portion of the back of the cassette to insert.
(4) Close the cassette compartment by pressing the PUSH mark on the cassette compartment. The cassette compartment automatically goes down.
(5) After the cassette compartment going down completely, close the lid until it clicks.

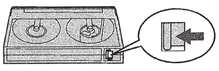


To eject a cassette

Follow the procedure above, and eject the cassette in step **3**.

Notes
- Do not press the cassette compartment down. Doing so may cause malfunction.
- Your camcorder records pictures in the Digital8 system.
- The recording time when you use your camcorder is half of indicated time on Hi8 **Hi8** tape. If you select the LP mode in the menu settings, 3/4 of indicated time on Hi8 **Hi8** tape.
- If you use standard 8 **8** tape, be sure to play back the tape on this camcorder. Mosaic pattern noise may appear when you play back standard 8 **8** tape on other camcorders (including other DCR-TRV230/TRV330/TRV530).
- The cassette compartment may not be closed when you press any part of the lid other than the PUSH mark.

To prevent accidental erasure
Slide the write-protect tab on the cassette to expose the red mark.

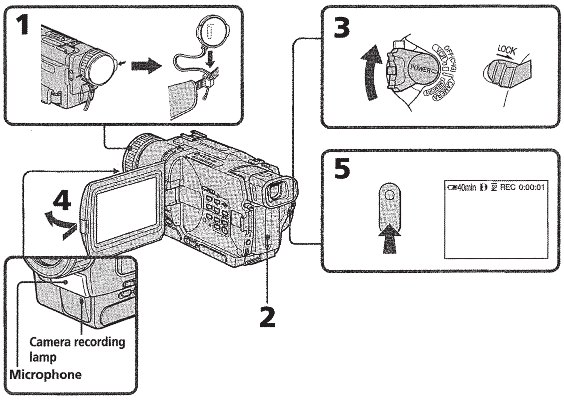


— **Recording – Basics** —

Recording a picture

Your camcorder automatically focuses for you.

(1) Remove the lens cap by pressing both knobs on its sides and attach the lens cap to the grip strap.
(2) Install the power source and insert a cassette. See "Step 1" to "Step 3" for more information (p. 11 to 18).
(3) Set the POWER switch to CAMERA while pressing the small green button. Your camcorder is set to the standby mode.
(4) Open the LCD panel while pressing OPEN. The viewfinder automatically turns off.
(5) Press START/STOP. Your camcorder starts recording. The REC indicator appears on the screen. The camera recording lamp located on the front of your camcorder lights up. To stop recording, press START/STOP again.
The recording lamp lights up in the viewfinder when you record with the viewfinder.



Notes
- Fasten the grip strap firmly.
- Do not touch the built-in microphone during recording.

Note on Recording mode
Your camcorder records and plays back in the SP (standard play) mode and in the LP (long play) mode. Select SP or LP in the menu settings (p. 79). In the LP mode, you can record 1.5 times as long as in the SP mode. When you record a tape in the LP mode on your camcorder, we recommend that you play back the tape on your camcorder.

Note on LOCK (DCR-TRV330/TRV530 only)
When you slide LOCK to the right, the POWER switch can no longer be set to MEMORY accidentally. The LOCK is released as a default setting.

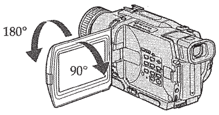
To enable smooth transition
You can make the transition between the last scene you recorded and the next scene smooth as long as you do not eject the cassette if you turn off your camcorder. When you change the battery pack, set the POWER switch to OFF (CHG).

If you leave your camcorder in the standby mode for 3 minutes
Your camcorder automatically turns off. This is to save battery power and to prevent battery and tape wear. To resume the standby mode, set the POWER switch to OFF (CHG) once, then turn it to CAMERA again.

When you record in the SP and LP modes on one tape or you record some scenes in the LP mode
The playback picture may be distorted or the time code may not be written properly between scenes.

Adjusting the LCD screen

The LCD panel moves about 90 degrees to the viewfinder side and about 180 degrees to the lens side.
If you turn the LCD panel over so that it faces the other way, the ☺ indicator appears on the LCD screen and in the viewfinder (**Mirror mode**).



When closing the LCD panel, set it vertically until it clicks, and swing it into the camcorder body.

Note
When using the LCD screen except in the mirror mode, the viewfinder automatically turns off.

When you use the LCD screen outdoors in direct sunlight
The LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

When you adjust angles of the LCD panel
Make sure if the LCD panel is opened up to 90 degrees.

Picture in the mirror mode
The picture on the LCD is a mirror-image. However, the picture will be normal when recorded.

During recording in the mirror mode
You cannot operate the ZERO SET MEMORY on the Remote Commander.

Indicators in the mirror mode
The STBY indicator appears as **II●** and REC as **●**. Some of other indicators appear mirror-reversed and others are not displayed.

When recording with the LCD panel opened
Recording time becomes shorter a little compared with when recording with the LCD panel closed.

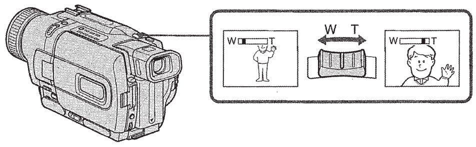
Brightness of the LCD screen
You can adjust the brightness of the LCD screen. Select LCD B.L. or LCD BRIGHT in the menu settings (p. 79). Even if you adjust the LCD B.L. or LCD BRIGHT, the recorded picture will not be affected.

After recording

(1) Set the POWER switch to OFF (CHG).
(2) Close the LCD panel.
(3) Eject the cassette.

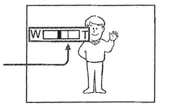
Using the zoom feature

Move the power zoom lever a little for a slower zoom. Move it further for a faster zoom. Using the zoom function sparingly results in better-looking recordings.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)



Zoom greater than 25× is performed digitally. To activate digital zoom, select the digital zoom power in D ZOOM in the menu settings. (p. 79)
The picture quality deteriorates as the picture is processed digitally.

The right side of the bar shows the digital zooming zone.
The digital zooming zone appears when you select the digital zoom power in D ZOOM in the menu settings.



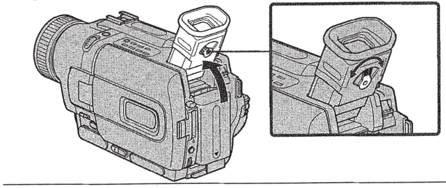
Notes on digital zoom
- Digital zoom starts to function when zoom exceeds 25×.
- The picture quality deteriorates as you go toward the "T" side.

When you shoot close to a subject
If you cannot get a sharp focus, move the power zoom lever to the "W" side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 feet 5/8 inch) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

To record pictures with the viewfinder – adjusting the viewfinder

If you record pictures with the LCD panel closed, check the picture with the viewfinder. Adjust the viewfinder lens to your eyesight so that the indicators in the viewfinder come into sharp focus.

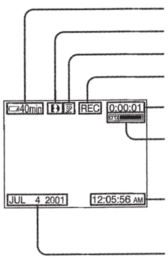
Lift up the viewfinder and move the viewfinder lens adjustment lever.



Viewfinder backlight
You can change the brightness of the backlight. Select VF B.L. in the menu settings. (p. 79)

Indicators displayed in the recording mode

The indicators are not recorded on tape.



Remaining battery time indicator

Format indicator

Recording mode indicator

STBY/REC indicator

Time code/Tape counter indicator

Remaining tape indicator
This appears after the POWER switch is set to CAMERA for a while.

Time indicator
This is displayed for five seconds after the POWER switch is set to CAMERA or MEMORY (DCR-TRV330/TRV530 only).

Date indicator
This is displayed for five seconds after the POWER switch is set to CAMERA or MEMORY (DCR-TRV330/TRV530 only).

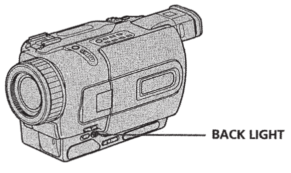
Remaining battery time indicator
The remaining battery time indicator roughly indicates the recording time. The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time in minutes to be displayed.

Time code (for tapes recorded in the Digital8 Ð system only)
The time code indicates the recording or playback time, "0:00:00" (hours:minutes: seconds) in CAMERA mode and "0:00:00:00" (hours:minutes:seconds:frames) in VCR mode. You cannot rewrite only the time code.
When you play back tapes recorded in the Hi8/standard 8 system, the tape counter appears on the screen.
You cannot reset the time code or the tape counter.

Shooting backlit subjects – BACK LIGHT

When you shoot a subject with the light source behind the subject or a subject with a light background, use the backlight function.

Press BACK LIGHT in CAMERA or MEMORY (DCR-TRV330/TRV530 only) mode.
The ▣ indicator appears on the screen.
To cancel, press BACK LIGHT again.

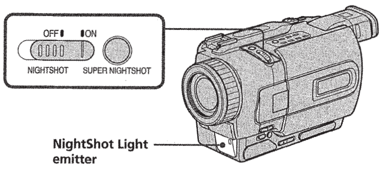


If you press EXPOSURE when shooting backlit subjects
The backlight function will be canceled.

Shooting in the dark – NightShot/Super NightShot

The NightShot function enables you to shoot a subject in a dark place. For example, you can satisfactorily record the environment of nocturnal animals for observation when you use this function.

While your camcorder is in CAMERA or MEMORY (DCR-TRV330/TRV530 only) mode, slide NIGHTSHOT to ON.
◉ and "NIGHTSHOT" indicators flash on the screen.
To cancel the NightShot function, slide NIGHTSHOT to OFF.



Using SUPER NIGHTSHOT

The Super NightShot mode makes subjects up to 16 times brighter than those recorded in the NightShot mode.

(1) Slide NIGHTSHOT to ON in CAMERA mode. ◉ and "NIGHTSHOT" indicators flash on the screen.
(2) Press SUPER NIGHTSHOT. S◉ and "SUPER NIGHTSHOT" indicators flash on the screen.
To cancel the Super NightShot mode, press SUPER NIGHTSHOT again.

Using the NightShot Light

The picture will be clearer with the NightShot Light on. To enable NightShot Light, set N.S.LIGHT to ON in the menu settings (p. 79).

Notes

- Do not use the NightShot function in bright places (ex. outdoors in the daytime). This may cause your camcorder to malfunction.
- When you keep NIGHTSHOT set to ON in normal recording, the picture may be recorded in incorrect or unnatural colors.
- If focusing is difficult with the autofocus mode when using the NightShot function, focus manually.

While using the NightShot function, you can not use the following functions:
– Exposure
– PROGRAM AE

While using the Super NightShot function, you can not use the following functions:
– Fader
– Digital effect
– Exposure
– PROGRAM AE

Shutter speed in the Super NightShot mode
The shutter speed will be automatically changed depending on the brightness of the background. The motion of the picture will be slow.

In MEMORY mode (DCR-TRV330/TRV530 only)
You cannot use the Super NightShot function.

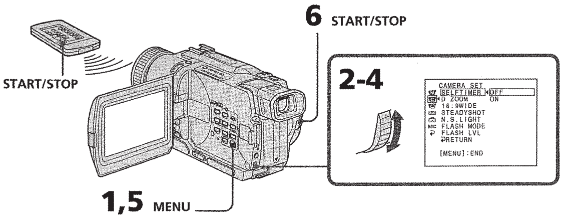
NightShot Light
NightShot Light rays are infrared and so are invisible. The maximum shooting distance using the NightShot Light is about 3 m (10 feet).

Self-timer recording

– DCR-TRV330/TRV530 only

Recording with the self-timer starts in 10 seconds automatically. You can also use the Remote Commander for this operation.

(1) Press MENU to display the menu settings in the standby mode.
(2) Turn the SEL/PUSH EXEC dial to select ◙, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select SELFTIMER, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(5) Press MENU to make the menu settings disappear.
(6) Press START/STOP.
Self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep sound gets faster, then recording starts automatically. To stop recording, press START/STOP again.



To stop the countdown

Press START/STOP.
To restart the countdown, press START/STOP again.

To record still images using the self-timer

Press PHOTO in step 6. (P. 34)

To cancel self-timer recording

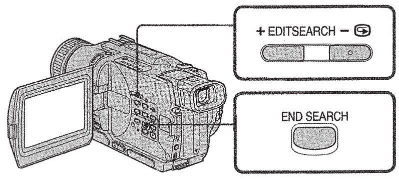
Set SELFTIMER to OFF in the menu settings in the standby mode.

Note
The self-timer recording mode is automatically cancelled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

Self-timer memory photo recording (DCR-TRV330/TRV530 only)
You can also record still images on "Memory Stick"s with the self-timer (p. 97).

Checking the recording
– END SEARCH/EDITSEARCH/Rec Review

You can use these buttons to check the recorded picture or shoot so that the transition between the last recorded scene and the next scene you record is smooth.



END SEARCH

You can go to the end of the recorded section after you record.

Press END SEARCH in the standby mode.
The last 5 seconds of the recorded section are played back and returns to the standby mode. You can monitor the sound from the speaker or headphones.

EDITSEARCH

You can search for the next recording start point.

Hold down the +/– (⊜) side of EDITSEARCH in the standby mode. The recorded section is played back.
+ : to go forward
– : to go backward
Release EDITSEARCH to stop playback. If you press START/STOP, re-recording begins from the point you released EDITSEARCH. You cannot monitor the sound.

Rec Review

You can check the section which you have stopped most recently.

Press the – (⊜) side of EDITSEARCH momentarily in the standby mode.
The section you have stopped most recently will be played back for a few seconds, and then your camcorder will return to the standby mode. You can monitor the sound from the speaker or headphones.

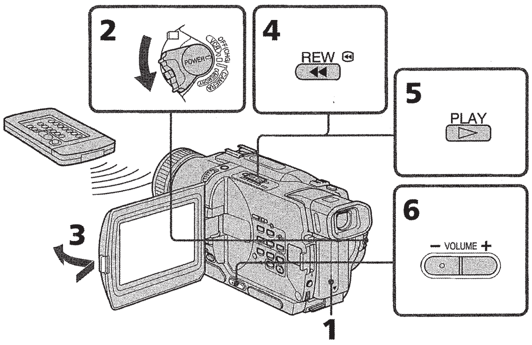
Notes
- END SEARCH, EDITSEARCH and Rec Review work only for tapes recorded in the Digital8 Ð system.
- If you start recording after using the end search function, occasionally, the transition between the last scene you recorded and the next scene may not be smooth.
- Once you eject the cassette after you have recorded on the tape, the end search function does not work.

If a tape has a blank portion in the recorded portions
The end search function may not work correctly.

Playing back a tape

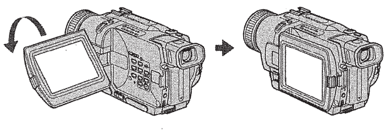
You can monitor the playback picture on the LCD screen. If you close the LCD panel, you can monitor the playback picture in the viewfinder. You can control playback using the Remote Commander supplied with your camcorder.

(1) Install the power source and insert the recorded tape.
(2) Set the POWER switch to VCR while pressing the small green button.
(3) Open the LCD panel while pressing OPEN.
(4) Press ◀◀ to rewind the tape.
(5) Press ▶ to start playback.
(6) To adjust the volume, press either of the two buttons on VOLUME. The speaker on your camcorder is silent when the LCD panel is closed.



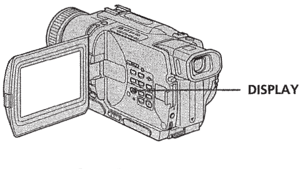
To stop playback
Press ■.

When monitoring on the LCD screen
You can turn the LCD panel over and move it back to the camcorder body with the LCD screen facing out.



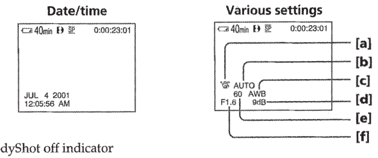
To display the screen indicators – Display function

Press DISPLAY on your camcorder or the Remote Commander supplied with your camcorder.
The indicators appear on the screen.
To make the indicators disappear, press DISPLAY again.



Using the data code function
Your camcorder automatically records not only images on the tape but also the recording data (date/time or various settings when recorded) **(Data code)**. Use the Remote Commander for this operation.

Press DATA CODE on the Remote Commander in the playback mode.
The display changes as follows:
date/time → various settings (SteadyShot, exposure AUTO/MANUAL, white balance, gain, shutter speed, aperture value) → no indicator



[a] SteadyShot off indicator
[b] Exposure mode indicator
[c] White balance indicator
[d] Gain indicator
[e] Shutter speed indicator
[f] Aperture value

Not to display various settings
Set DATA CODE to DATE in the menu settings (p. 79).
The display changes as follows:
date/time → no indicator

Notes on the data code function
- The data code function works only for tapes recorded in the Digital8 Ð system.
- Various settings of the recording data are not recorded when recording images on "Memory Stick" (DCR-TRV330/TRV530 only).

Recording data
Recording data is your camcorder's information when you have recorded. In the recording mode, the recording data will not be displayed.

When you use data code function, bars (--- -- ---- and --:--:--) appear if:
– A blank section of the tape is being played back.
– The tape is unreadable due to tape damage or noise.
– The tape was recorded by a camcorder without the date and time set.

Data code
When you connect your camcorder to the TV, the data code appears on the TV screen.

Remaining battery time indicator during playback
The indicator indicates the approximate continuous playback time. The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about 1 minute for the correct remaining battery time to be displayed.

Various playback modes

To operate video control buttons, set the POWER switch to VCR.

To view a still image (playback pause)
Press ❚❚ during playback. To resume playback, press ❚❚ or ▶.

To advance the tape
Press ▶▶ in the stop mode. To resume normal playback, press ▶.

To rewind the tape
Press ◀◀ in the stop mode. To resume normal playback, press ▶.

To change the playback direction
Press < on the Remote Commander during playback to reverse the playback direction. To resume normal playback, press ▶.

To locate a scene monitoring the picture (picture search)
Keep pressing ◀◀ or ▶▶ during playback. To resume normal playback, release the button.

To monitor the high-speed picture while advancing or rewinding the tape (skip scan)
Keep pressing ◀◀ while rewinding or ▶▶ while advancing the tape. To resume rewinding or advancing, release the button.

To view the picture at slow speed (slow playback)
Press ❚▶ on the Remote Commander during playback. For slow playback in the reverse direction, press <, then press ❚▶ on the Remote Commander. To resume normal playback, press ▶.

To view the picture at double speed
Press ×2 on the Remote Commander during playback. For double speed playback in the reverse direction, press <, then press ×2 on the Remote Commander. To resume normal playback, press ▶.

To view the picture frame-by-frame
Press ❚❚▶ on the Remote Commander in the playback pause mode. For frame-by-frame playback in the reverse direction, press ◀❚❚. To resume normal playback, press ▶.

To search the last scene recorded (END SEARCH)
Press END SEARCH in the stop mode. The last 5 seconds of the recorded section plays back and stops.

In the various playback modes

- Noise may appear when your camcorder plays back tapes recorded in the Hi8/standard 8 system.
- Sound is muted.
- The previous recording may appear as a mosaic image when playing back in the Digital8 Ð system.

Notes on the playback pause mode

- When the playback pause mode lasts for 3 minutes, your camcorder automatically enters the stop mode. To resume playback, press ►.
- The previous recording may appear.

Slow playback for tapes recorded in the Digital8 Ð system

The slow playback can be performed smoothly on your camcorder; however, this function does not work for an output signal from the DV IN/OUT jack.

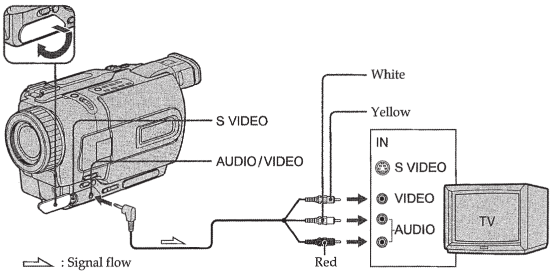
When you play back a tape in reverse

Horizontal noise may appear at the center or top and bottom of the screen. This is not a malfunction.

Viewing the recording on TV

Connect your camcorder to your TV with the A/V connecting cable supplied with your camcorder to watch the playback picture on the TV screen. You can operate the playback control buttons in the same way as when you monitor playback pictures on the LCD screen. When monitoring the playback picture on the TV screen, we recommend that you power your camcorder from a wall outlet using the AC power adaptor (p. 16). Refer to the operating instructions of your TV.

Open the jack cover. Connect your camcorder to the TV using the A/V connecting cable. Then, set the TV/VCR selector on the TV to VCR.



If your TV is already connected to a VCR

Connect your camcorder to the LINE IN input on the VCR by using the A/V connecting cable supplied with your camcorder. Set the input selector on the VCR to LINE.

If your TV or VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.

If your TV or VCR has an S video jack

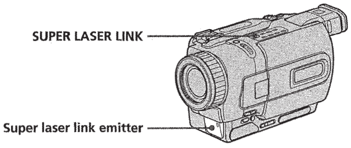
Connect using an S video cable (optional) to obtain high-quality pictures.
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S video jacks on both your camcorder and the TV or the VCR.

To display the screen indicators on TV

Set DISPLAY to V-OUT/LCD in the menu settings (p. 79).
Then press DISPLAY on your camcorder. To turn off the screen indicators, press DISPLAY on your camcorder again.

Using the AV cordless IR receiver

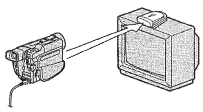
Once you connect the AV cordless IR receiver (optional) to your TV or VCR, you can easily view the picture on your TV. For details, refer to the operating instructions of the AV cordless IR receiver.



Before operation

Attach the power supply such as the AC power adaptor to your camcorder, and insert the recorded tape.

(1) After connecting your TV and AV cordless IR receiver, set the POWER switch on the AV cordless IR receiver to ON.
(2) Turn the TV on and set the TV/VCR selector on the TV to VCR.
(3) Set the POWER switch on your camcorder to VCR.
(4) Press SUPER LASER LINK. The lamp of SUPER LASER LINK lights up.
(5) Press ► on your camcorder to start playback.
(6) Point the super laser link emitter at the AV cordless IR receiver. Adjust the position of your camcorder and the AV cordless IR receiver to obtain clear playback pictures.



To cancel the super laser link function

Press SUPER LASER LINK. The lamp on the SUPER LASER LINK button goes out.

If you use a Sony TV

- You can turn on the TV automatically when you press SUPER LASER LINK on your camcorder. To do so, do as follow in advance:
  - Turn the TV's main switch on.
  - Set AUTO TV ON to ON in the menu settings.
  - Point the super laser link emitter of your camcorder at the TV's remote sensor.
- You can switch the video input of the TV automatically to the one which the AV cordless IR receiver is connected. To do so, set AUTO TV ON to ON and TV INPUT to the same video input (1, 2, 3) in the menu settings. With some models, however, the picture and sound may be disconnected momentarily when the video input is switched.
- The above feature may not work on some TV models.

If you turn the power off

Super laser link function turns off automatically.

When super laser link is activated (the SUPER LASER LINK button is lit)

Your camcorder consumes power. Press SUPER LASER LINK to turn off the super laser link function when it is not needed.

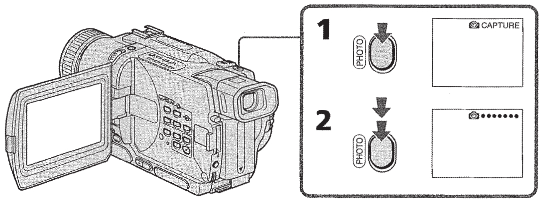
is a trademark of Sony Corporation.

— Advanced Recording Operations —

Recording a still image on a tape – Tape Photo recording

You can record a still image like a photograph. This mode is useful when you want to record an image such as a photograph or when you print a picture using a video printer (optional).
You can record about 510 images in the SP mode and about 765 images in the LP mode on a tape which can record for 60 minutes in the SP mode.
Besides the operation described here, your camcorder can record still images on "Memory Stick"s (p. 93) (DCR-TRV330/TRV530 only).

(1) In the standby mode, keep pressing PHOTO lightly until a still image appears.
The CAPTURE indicator appears on the screen. Recording does not start yet.
To change the still image, release PHOTO, select a still image again, and then press and hold PHOTO lightly.
(2) Press PHOTO deeper.
The still image on the screen is recorded for about seven seconds. The sound during those seven seconds is also recorded.
The still image is displayed until recording is completed.



Notes

- During the tape photo recording, you cannot change the mode or setting.
- The PHOTO button does not work:
  - while the digital effect function is set or in use.
  - while the fader function is in use.
- When recording a still image, do not shake your camcorder. Mosaic-pattern noise may appear on the image.

To use tape photo recording function using the Remote Commander

Press PHOTO in the Remote Commander. Your camcorder records an image on the screen immediately.

When you use the tape photo recording function during normal CAMERA recording

You cannot check an image on the screen by pressing PHOTO lightly. Press PHOTO deeper. The still image is then recorded for about seven seconds, and your camcorder returns to the standby mode.

To record clear and less fluctuated still images (DCR-TRV330/TRV530 only)

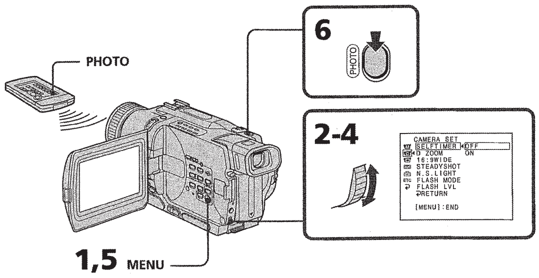
We recommend that you record on "Memory Stick"s .

Self-timer recording

– DCR-TRV330/TRV530 only

You can record still images on tapes with the self-timer. You can also use the Remote Commander for this operation.

(1) In the standby mode, press MENU to display the menu settings.
(2) Turn the SEL/PUSH EXEC dial to select 📷, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select SELFTIMER, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(5) Press MENU to make the menu settings disappear.
(6) Press PHOTO deeper.
Self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep sound gets faster, then recording starts automatically.



To cancel self-timer recording

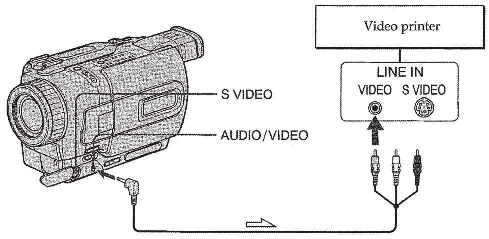
Set SELFTIMER to OFF in the menu settings in the standby mode.
You cannot cancel the self-timer recording using the Remote Commander.

Note

The self-timer recording mode is automatically cancelled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

Printing the still image

You can print a still image by using the video printer (optional). Connect the video printer using the A/V connecting cable supplied with your camcorder.
Connect the A/V connecting cable to the AUDIO/VIDEO jack and connect the yellow plug of the cable to the video input of the video printer. Refer to the operating instructions of the video printer as well.



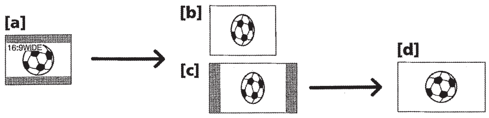
⇨ : Signal flow

If the video printer is equipped with S video input

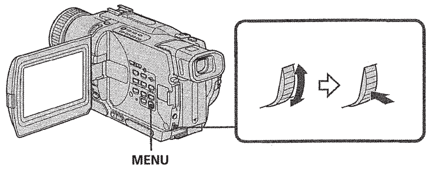
Use the S video connecting cable (optional). Connect it to the S VIDEO jack and the S video input of the video printer.

Using the wide mode

You can record a 16:9 wide picture to watch on the 16:9 wide-screen TV (16:9WIDE). Black bands appear on the LCD screen or in the viewfinder during recording in 16:9 WIDE mode **[a]**. The picture during playing back on a normal TV **[b]** or a wide-screen TV **[c]** are compressed in the widthwise direction. If you set the screen mode of the wide-screen TV to the full mode, you can watch pictures of normal images **[d]**.



In the standby mode, set 16:9WIDE to ON in the menu settings (p. 79).



To cancel the wide mode

Set 16:9WIDE to OFF in the menu settings.

In the wide mode, you cannot select the following functions:
– Old movie
– Bounce

During recording
You cannot select or cancel the wide mode. When you cancel the wide mode, set your camcorder to the standby mode and then set 16:9WIDE to OFF in the menu setting.

Connection for a TV
Pictures recorded in the 16:9WIDE mode automatically appear on the TV screen at full size when:
– you connect your camcorder to a TV that is compatible with the video ID (ID-1/ID-2) system.
– you connect your camcorder to the S video jack on the TV.

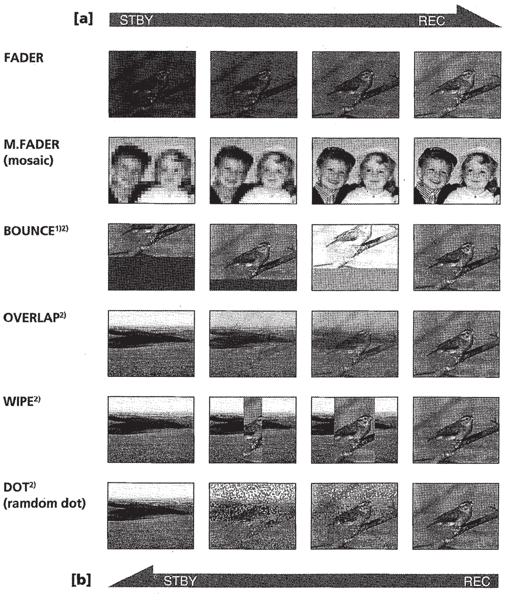
ID-1 system
The ID-1 system sends aspect ratio information (16:9, 4:3, or letter box) with video signals. If you connect a TV compatible with the ID-1 system, the screen size is automatically selected.

ID-2 system
The ID-2 system sends a copyright protection signal with ID-1 signals inserted between video signals when you connect your camcorder to other equipment by an A/V connecting cable.

If the wide mode is set to ON
The SteadyShot function does not work. If you set 16:9WIDE to ON in the menu settings when the SteadyShot function is working, 🖐 flashes and the SteadyShot function does not function.

Using the fader function

You can fade the picture in or out to give your recording a professional appearance.



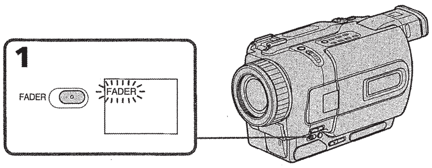
MONOTONE
When fading in, the picture gradually changes from black-and-white to color.
When fading out the picture gradually changes from color to black-and-white.

[1] You can use this function when D ZOOM is set to OFF in the menu setting.
[2] Fade in only

Using the fader function

(1) When fading in [a]
In the standby mode, press FADER until the desired fader indicator flashes.
When fading out [b]
In the recording mode, press FADER until the desired fader indicator flashes.
The indicator changes as follows:
FADER → M.FADER → BOUNCE → MONOTONE → OVERLAP → WIPE → DOT
The last selected fader mode is indicated first of all.

(2) Press START/STOP. The fader indicator stops flashing.
After the fade in/out is carried out, your camcorder automatically returns to the normal mode.



To cancel the fader function

Before pressing START/STOP, press FADER until the indicator disappears.

Notes

- The overlap, wipe and dot functions work only for tapes recorded in the Digital8 system.
- You cannot use the following functions while using the fader function. Also, you cannot use the fader function while using the following functions:
  - Digital effect
  - Low lux mode of PROGRAM AE (Overlap, wipe, or dot function only)
  - Super NightShot
  - Tape photo recording

Before operating the overlap, wipe, or dot function
Your camcorder stores the image on the tape. As the image is being stored, the indicator flashes quickly, and the image you are shooting disappears from the screen. Depending on the tape condition, the image may not be recorded clearly.

Note on the bounce function
You can use this function when D ZOOM is set to OFF in the menu settings.

Using the fader function

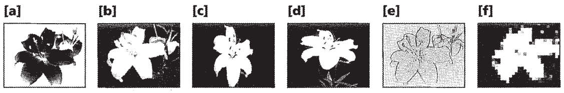
While using the bounce function, you cannot use the following functions:
- Focus
- Zoom
- Picture effect

Note on the bounce function
The BOUNCE indicator does not appear in the following mode or functions:
- D ZOOM is activated in the menu settings
- Wide mode
- Picture effect
- PROGRAM AE

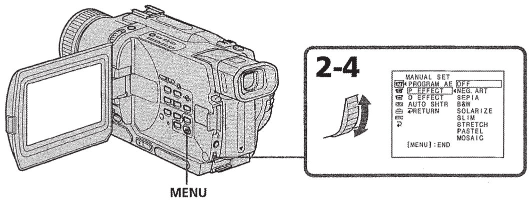
Using special effects – Picture effect

You can digitally process images to obtain special effects like those in films or on the TV.

NEG. ART [a] :	The color and brightness of the image is reversed.
SEPIA :	The image is sepia.
B&W :	The image is monochrome (black-and-white).
SOLARIZE [b] :	The light intensity is clearer, and the picture looks like an illustration.
SLIM [c] :	The image expands vertically.
STRETCH [d] :	The image expands horizontally.
PASTEL [e] :	The contrast of the image is emphasized, and the image looks like an animated cartoon.
MOSAIC [f] :	The image is mosaic.



(1) Press MENU to display the menu settings in CAMERA mode.
(2) Turn SEL/PUSH EXEC dial to select ▣, then press the dial.
(3) Turn SEL/PUSH EXEC dial to select P EFFECT, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the desired picture effect mode, then press the dial.



To turn the picture effect function off

Set P EFFECT to OFF in the menu settings.

While using the picture effect function
You cannot select OLD MOVIE with the digital effect function.

When you turn the power off
The picture effect is automatically canceled.

Using special effects – Digital effect

You can add special effects to recorded image using the various digital functions. The sound is recorded normally.

STILL
You can record a still image so that it is superimposed on a moving image.

FLASH (FLASH MOTION)
You can record still images successively at constant intervals.

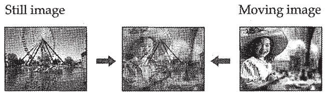
LUMI. (LUMINANCEKEY)
You can swap a brighter area in a still image with a moving image.

TRAIL
You can record the image so that an incidental image like a trail is left.

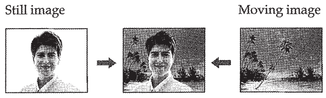
SLOW SHTR (SLOW SHUTTER)
You can slow down the shutter speed. The slow shutter mode is good for recording dark images more brightly.

OLD MOVIE
You can add an old movie type atmosphere to images. Your camcorder automatically sets the wide mode to ON, picture effect to SEPIA, and the appropriate shutter speed.

STILL



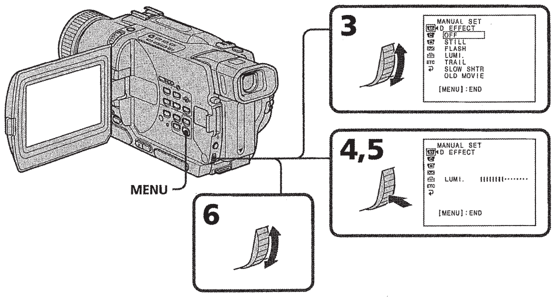
LUMI.



(1) Press MENU to display the menu settings in CAMERA mode.
(2) Turn SEL/PUSH EXEC dial to select ▣, then press the dial.
(3) Turn SEL/PUSH EXEC dial to select D EFFECT, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the desired digital effect mode.
(5) Press the SEL/PUSH EXEC dial. The bars appear on the screen. In the STILL and LUMI. modes, the still image is stored in memory.
(6) Turn the SEL/PUSH EXEC dial to adjust the effect as follows:

STILL – The rate of the still image you want to superimpose on the moving image
FLASH – The interval of flash motion
LUMI. – The color scheme of the area in the still image which is to be swapped with a moving image
TRAIL – The vanishing time of the incidental image
SLOW SHTR – Shutter speed. The larger the shutter speed number, the slower the shutter speed.
OLD MOVIE – No adjustment necessary

The more bars there are on the screen, the stronger the digital effect. The bars appear in the following modes: STILL, FLASH, LUMI. and TRAIL.



To cancel the digital effect
Set D EFFECT to OFF in the menu settings.

Notes
- The following functions do not work during digital effect:
  - –Fader
  - –Low lux mode of PROGRAM AE
  - –Tape photo recording
  - –Super NightShot
- The following function does not work in the slow shutter mode:
  - –PROGRAM AE
- The following functions do not work in the old movie mode:
  - –Wide mode
  - –Picture effect
  - –PROGRAM AE

When you turn the power off
The digital effect is automatically canceled.

When recording in the slow shutter mode
Auto focus may not be effective. Focus manually using a tripod.

Shutter speed

Shutter speed number	Shutter speed
SLOW SHTR 1	1/30
SLOW SHTR 2	1/15
SLOW SHTR 3	1/8
SLOW SHTR 4	1/4

Using the PROGRAM AE function

You can select PROGRAM AE (Auto Exposure) mode to suit your specific shooting requirements.

Spotlight
This mode prevents people's faces, for example, from appearing excessively white when shooting subjects lit by strong light in the theater.

Soft portrait
This mode brings out the subject while creating a soft background for subjects such as people or flowers.

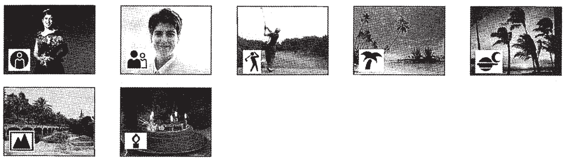
Sports lesson
This mode minimizes shake on fast-moving subjects such as in tennis or golf.

Beach & ski
This mode prevents people's faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.

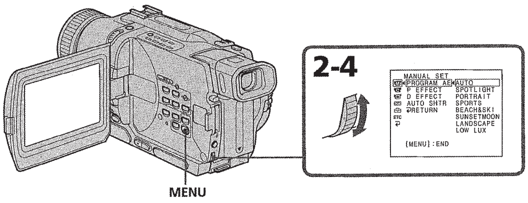
Sunset & moon
This mode allows you to maintain atmosphere when you are recording sunsets, general night views, fireworks displays and neon signs.

Landscape
This mode is for when you are recording distant subjects such as mountains and prevents your camcorder from focusing on glass or metal mesh in windows when you are recording a subject behind glass or a screen.

Low lux
This mode makes subjects brighter in insufficient light.



(1) Press MENU to display menu settings in CAMERA or MEMORY (DCR-TRV330/TRV530 only) mode.
(2) Turn SEL/PUSH EXEC dial to select ▣, then press the dial.
(3) Turn SEL/PUSH EXEC dial to select PROGRAM AE, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the desired mode.



To turn the PROGRAM AE function off
Set PROGRAM AE to OFF in the menu settings.

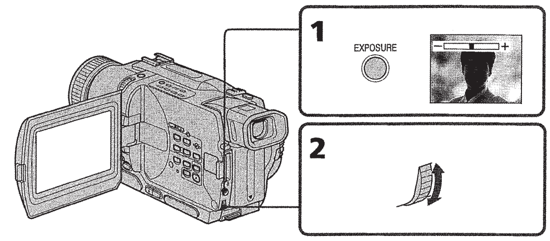
Notes
- In the spotlight, sports lesson and beach & ski modes, you cannot take close-ups. This is because your camcorder is set to focus only on subjects in the middle to far distance.
- In the sunset & moon and landscape modes, your camcorder is set to focus only on distant subjects.
- The following functions do not work in the PROGRAM AE mode:
  - –Slow shutter
  - –Old movie
  - –Bounce
- The following functions do not work in the low lux mode:
  - –Digital effect
  - –Overlap
  - –Wipe
  - –Dot
- While setting the NIGHTSHOT to ON, the PROGRAM AE function does not work. (The indicator flashes.)
- While shooting in MEMORY mode, the low lux mode does not work. (The indicator flashes.) (DCR-TRV330/TRV530 only)

If you are recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp
Flickering or changes in color may occur in the following modes. If this happens, turn the PROGRAM AE function off.
–Soft portrait mode
–Sports lesson mode

Adjusting the exposure manually

You can manually adjust and set the exposure.
Adjust the exposure manually in the following cases:
- The subject is backlit
- Bright subject and dark background
- To record dark pictures (e.g. night scenes) faithfully

(1) Press EXPOSURE in CAMERA or MEMORY (DCR-TRV330/TRV530 only) mode. The exposure indicator appears on the screen.
(2) Turn the SEL/PUSH EXEC dial to adjust the brightness.



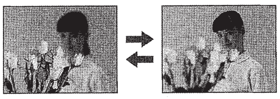
To return to the automatic exposure mode
Press EXPOSURE.

Note
When you adjust the exposure manually, the backlight function does not work in CAMERA or MEMORY (DCR-TRV330/TRV530 only) mode.

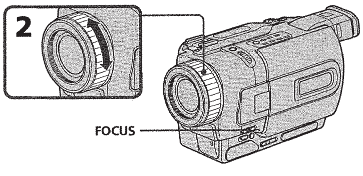
Your camcorder automatically returns to the automatic mode:
- if you change the PROGRAM AE mode
- if you slide NIGHTSHOT to ON

Focusing manually

You can gain better results by manually adjusting the focus in the following cases:
- The autofocus mode is not effective when shooting:
  - subjects through glass coated with water droplets.
  - horizontal stripes.
  - subjects with little contrast with backgrounds such as walls and sky.
- When you want to change the focus from a subject in the foreground to a subject in the background.
- Shooting a stationary subject when using a tripod.



(1) Set FOCUS to MANUAL in CAMERA or MEMORY (DCR-TRV330/TRV530 only) mode. The Ⓕ indicator appears on the screen.
(2) Turn the focus ring to sharpen focus.



To return to the autofocus mode
Set FOCUS to AUTO.

To focus precisely
Adjust the zoom by first focusing at the "T" (telephoto) position and then shooting at the "W" (wide-angle) position. This makes focusing easier.

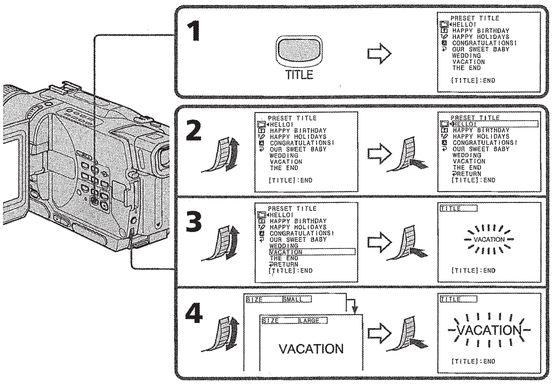
When you shoot close to the subject
Focus at the end of the "W" (wide-angle) position.

Ⓕ changes to the following indicators:
▲ when recording a distant subject.
● when the subject is too close to focus on.

Superimposing a title

You can select one of eight preset titles and two custom titles (p. 50). You can also select the language, color, size and position of titles.

(1) Press TITLE to display the title menu in the standby mode. The title menu display appears on the screen.
(2) Turn the SEL/PUSH EXEC dial to select □, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select the desired title, then press the dial. The titles are displayed in the language you selected.
(4) Change the color, size, or position, if necessary.
  ① Turn the SEL/PUSH EXEC dial to select the color, size, or position, then press the dial. The item appears on the screen.
  ② Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.
  ③ Repeat steps ① and ② until the title is laid out as desired.
(5) Press the SEL/PUSH EXEC dial again to complete the setting.
(6) Press START/STOP to start recording.
(7) When you want to stop recording the title, press TITLE.



To superimpose the title while you are recording
Press TITLE while you are recording, and carry out steps 2 to 5. When you press the SEL/PUSH EXEC dial at step 5, the title is recorded.

To select the language of a preset title
If you want to change the language, select 🄰 before step 2. Then select the desired language and return to step 2.

If you display the menu while superimposing a title
The title is not recorded while the menu is displayed.

To use the custom title
If you want to use the custom title, select ⊟ in step 2.

Title setting
- The title color changes as follows :
  WHITE ←→ YELLOW ←→ VIOLET ←→ RED ←→ CYAN ←→ GREEN ←→ BLUE
- The title size changes as follows :
  SMALL ←→ LARGE
  You cannot input more than 12 characters in LARGE size.
- The title position changes as follows :
  1←→ 2←→ 3←→ 4←→ 5←→ 6←→ 7←→ 8←→ 9
  The larger the position number, the lower the title is positioned.
  When you select the title size LARGE, you cannot choose position 9.

When you are selecting and setting the title
You cannot record the title displayed on the screen.

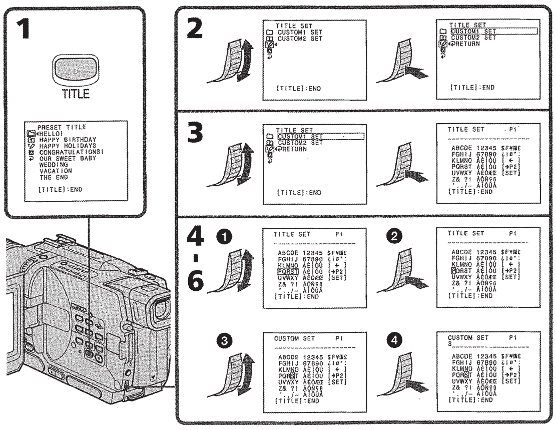
When you superimpose a title while you are recording
The beep does not sound.

While you are playing back
You can superimpose a title. However, the title is not recorded on tape.
You can record a title when you dub a tape connecting your camcorder to the VCR with the A/V connecting cable. If you use the i. LINK cable instead of the A/V connecting cable, you cannot record the title.

Making your own titles

You can make up to two titles and store them in your camcorder. Each title can have up to 20 characters.

(1) Press TITLE in the standby or VCR mode.
(2) Turn the SEL/PUSH EXEC dial to select T⁄, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select CUSTOM1 SET or CUSTOM2 SET, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the column of the desired character, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the desired character, then press the dial.
(6) Repeat steps 4 and 5 until you have selected all characters and completed the title.
(7) To finish making your own titles, turn the SEL/PUSH EXEC dial to select [SET], then press the dial. The title is stored in memory.
(8) Press TITLE to make the title menu disappear.



To change a title you have stored

In step 3, select CUSTOM1 SET or CUSTOM2 SET, depending on which title you want to change, then press the SEL/PUSH EXEC dial. Turn the SEL/PUSH EXEC dial to select [←], then press the dial to delete the title. The last character is erased. Enter the new title as desired.

If you take 3 minutes or longer to enter characters in the standby mode while a cassette is in your camcorder
The power automatically goes off. The characters you have entered remain stored in memory. Set the POWER switch to OFF (CHG) once, and turn it to CAMERA again, then proceed from step 1.
We recommend setting the POWER switch to VCR or removing the cassette so that your camcorder does not automatically turn off while you are entering title characters.

If you select [→P2]
The menu for selecting alphabet and Russian characters appear. Select [→P1] to return to the previous screen.

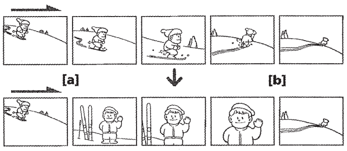
To erase a character
Select [←]. The last character is erased.

To enter a space
Select [Z& ?!], then select the blank part.

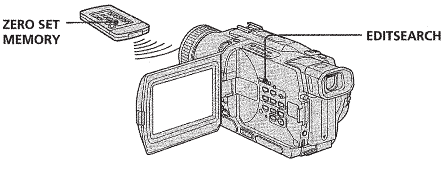
Advanced Recording Operations

Inserting a scene

You can insert a scene in the middle of a recorded tape by setting the start and end points. The previously recorded frames between these start and end points will be erased. Use the Remote Commander for this operation.



(1) While your camcorder is in the standby mode, keep pressing EDITSEARCH, and release the button at the insert end point **[b]**.
(2) Press ZERO SET MEMORY. The ZERO SET MEMORY indicator flashes and the counter resets to zero.
(3) Keep pressing the – ⊖ side of EDITSEARCH and release the button at the insert start point **[a]**.
(4) Press START/STOP to start recording. The scene is inserted. Recording stops automatically near the counter zero point. Your camcorder returns to the standby mode.



Notes
- The zero set memory function works only for tapes recorded in the Digital8 Ð system.
- The picture and the sound may be distorted at the end of the inserted section when it is played back.

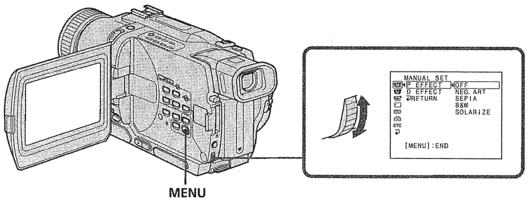
If a tape has a blank portion in the recorded portions
The zero set memory function may not work correctly.

— Advanced Playback Operations —

Playing back a tape with picture effects

During playback, you can process a scene using the picture effect functions: NEG.ART, SEPIA, B&W and SOLARIZE.

(1) Press MENU to display the menu settings in the playback or playback pause mode.
(2) Turn SEL/PUSH EXEC dial to select ▣, then press the dial.
(3) Turn SEL/PUSH EXEC dial to select P EFFECT, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the desired picture effect mode, then press the dial.
For ditails of each picture effect function, see page 40.



To cancel the picture effect function

Set P EFFECT to OFF in the menu settings.

Notes
- The picture effect function works only for tapes recorded in the Digital8 Ð system.
- You cannot process externally input scenes using the picture effect function.
- You cannot record pictures that you have processed using the picture effect function with this camcorder. To record pictures that you have processed using the picture effect function, record the pictures on the VCR using your camcorder as a player.

Pictures processed by the picture effect function
Pictures processed by the picture effect function are not output through the DV IN/OUT jack.

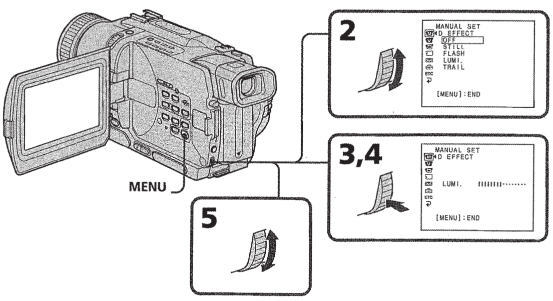
When you set the POWER switch to OFF (CHG) or stop playing back
The picture effect function is automatically canceled.

Advanced Playback Operations

Playing back a tape with digital effects

During playback, you can process a scene using the digital effect functions: STILL, FLASH, LUMI. and TRAIL.

(1) Press MENU to display the menu settings in the playback mode.
(2) Turn SEL/PUSH EXEC dial to select 📼, then press the dial.
(3) Turn SEL/PUSH EXEC dial to select D EFFECT, then press the dial.
(4) Turn SEL/PUSH EXEC dial to select the desired digital effect mode, then press the dial. The bars appear on the screen. In the STILL or LUMI. mode, the image where you press the SEL/PUSH EXEC dial is stored in memory as a still image.
(5) Turn the SEL/PUSH EXEC dial to adjust the effect.
For details of each digital effect function, see page 41.



To cancel the digital effect function

Set D EFFECT to OFF in the menu settings.

Notes

- The digital effect function works only for tapes recorded in the Digital8 Ð system.
- You cannot process externally input scenes using the digital effect function.
- You cannot record images that you have processed using the digital effect function with this camcorder. To record images that you have processed using the digital effect function, record the images on the VCR using your camcorder as a player.

Pictures processed by the digital effect function

Pictures processed by the digital effect function are not output through the DV IN/OUT jack.

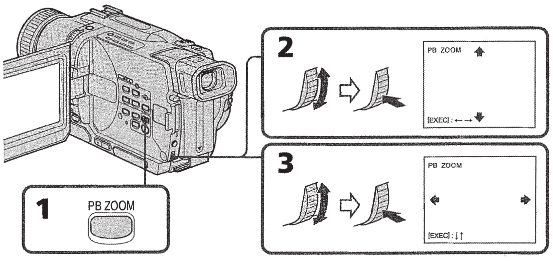
When you set the POWER switch to OFF (CHG) or stop playing back

The digital effect function is automatically canceled.

Enlarging recorded images – Tape PB ZOOM

You can enlarge moving and still images recorded on tapes. You can also dub the enlarged images to tapes or copy to "Memory Stick"s (DCR-TRV330/TRV530 only). Besides the operation described here, your camcorder can enlarge still images recorded on "Memory Stick"s (DCR-TRV330/TRV530 only).

(1) Press PB ZOOM on your camcorder in the playback or playback pause mode. The image is enlarged, and ↑ ↓ indicators which showing the direction to move the image appear on the screen.
(2) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
↑ : The image moves downwards.
↓ : The image moves upwards.
←→ becomes available.
(3) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
← : The image moves rightward (Turn the dial downwards.)
→ : The image moves leftward (Turn the dial upwards.)



To cancel PB ZOOM function

Press PB ZOOM.

Notes

- PB ZOOM works only for tapes recorded in the Digital8 Ð system.
- You cannot process externally input scenes using PB ZOOM function.
- You cannot record pictures that you have processed using PB ZOOM function with this camcorder. To record pictures that you have processed using PB ZOOM function, record the pictures on the VCR using your camcorder as a player.

Pictures processed by PB ZOOM function

Pictures processed by PB ZOOM function are not output through the DV IN/OUT jack.

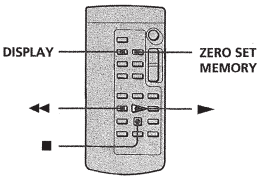
PB ZOOM function is automatically canceled when:

– the POWER switch is set to OFF (CHG)
– you stop playing back
– you press MENU
– you press TITLE

Quickly locating a scene using the zero set memory function

Your camcorder goes forward or backward to automatically stop at a desired scene having a counter value of "0:00:00".
Use the Remote Commander for this operation.
Use this function, for example, to view a desired scene later on during playback.

(1) In the playback mode, press DISPLAY.
(2) Press ZERO SET MEMORY at the point you want to locate later. The counter shows "0:00:00" and the ZERO SET MEMORY indicator flashes on the screen.
(3) Press ■ when you want to stop playback.
(4) Press ◀◀ to rewind the tape to the counter's zero point. The tape stops automatically when the counter reaches approximately zero. The ZERO SET MEMORY indicator disappears and the time code appears.
(5) Press ▶. Playback starts from the counter's zero point.



Notes

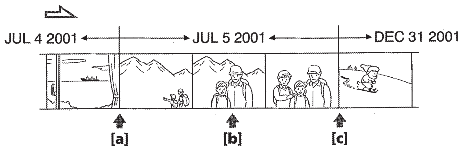
- The zero set memory function works only for tapes recorded in the Digital8 Ð system.
- When you press ZERO SET MEMORY before rewinding the tape, the zero set memory function is canceled.
- There may be a discrepancy of several seconds from the time code.

If a tape has a blank portion in the recorded portions

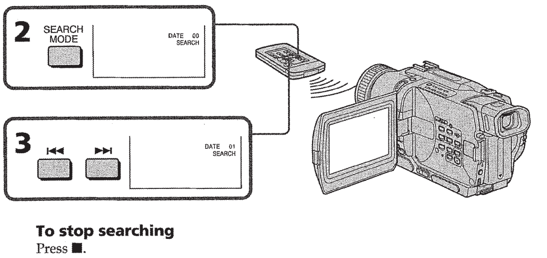
The zero set memory function may not work correctly.

Searching a recording by date – Date search

You can automatically search for the point where the recording date changes and start playback from that point **(Date search)**. Use the Remote Commander for this operation. Use this function to check where recording dates change or to edit the tape at each recording date.



(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears on the screen.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
(3) When the current position is **[b]**, press ⏮ to search towards **[a]** or press ⏭ to search towards **[c]**. Your camcorder automatically starts playback at the point where the date changes.
Each time you press ⏮ or ⏭, the camcorder searches for the previous or next date.



To stop searching

Press ■.

Notes

- The date search works only for tapes recorded in the Digital8 Ð system.
- If one day's recording is less than two minutes, your camcorder may not accurately find the point where the recording date changes.

If a tape has a blank portion in the recorded portions

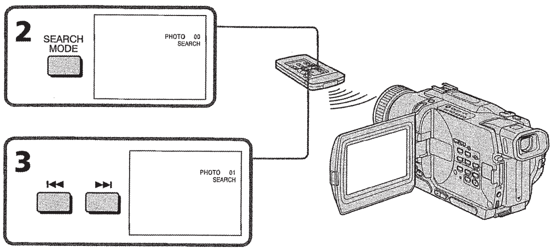
The date search function may not work correctly.

Searching for a photo – Photo search/Photo scan

You can search for the recorded still image recorded on tape **(photo search)**. You can also search for still images one after another and display each image for five seconds automatically **(photo scan)**. Use the Remote Commander for these operations.

Searching for a photo

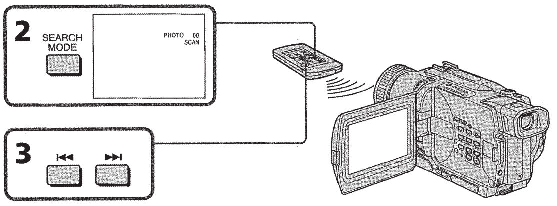
(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the photo search indicator appears on the screen.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
(3) Press ⏮ or ⏭ to select the photo for playback. Each time you press ⏮ or ⏭, the camcorder searches for the previous or next photo. Your camcorder automatically starts playback from the photo.



To stop searching
Press ■.

Scanning photo

(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the photo scan indicator appears on the screen.
The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
(3) Press ⏮ or ⏭.
Each photo is played back for about 5 seconds automatically.



To stop scanning
Press ■.

Note
The photo search and photo scan work only for tapes recorded in the Digital8 D8 system.

If a tape has a blank portion in the recorded portions
The photo search and photo scan functions may not work correctly.

— Editing —

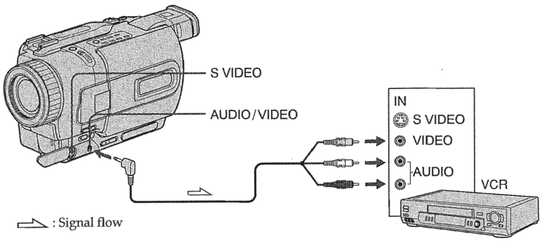
Dubbing a tape

Using the A/V connecting cable

You can dub or edit on the VCR connected to your camcorder using your camcorder as a player.
Connect your camcorder to the VCR using the A/V connecting cable supplied with your camcorder.

Before operation
- Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)
- Press the following buttons to make the indicators disappear so that they will not be superimposed on the edited tape:
  - –DISPLAY on your camcorder
  - –DATA CODE on the Remote Commander
  - –SEARCH MODE on the Remote Commander

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Set the input selector on the VCR to LINE. Refer to the operating instructions of your VCR for more information.
(3) Set the POWER switch to VCR.
(4) Play back the recorded tape on your camcorder.
(5) Start recording on the VCR.
Refer to the operating instructions of your VCR for more information.



⇨ : Signal flow

When you have finished dubbing a tape
Press ■ on both your camcorder and the VCR.

You can edit on VCRs that support the following systems:
8 8 mm, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC, B Betamax, ED Beta ED Betamax, Mini DV mini DV, DV DV or D8 Digital8

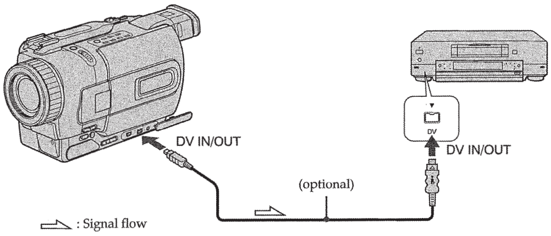
If your VCR is a monaural type
Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and the red plug is connected, the right channel audio is output.

If your VCR has an S video jack
Connect using an S video cable (optional) to obtain high-quality pictures.
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the VCR.

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to DV IN/OUT and to DV IN/OUT of the DV products. With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing. You cannot dub the screen indicators.

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Set the input selector on the VCR to DV IN if it is available. Refer to the operating instructions of your VCR for more information.
(3) Set the POWER switch to VCR.
(4) Play back the recorded tape on your camcorder.
(5) Start recording on the VCR.
Refer to the operating instructions of your VCR for more information.



⇨ : Signal flow

When you have finished dubbing a tape
Press ■ on both your camcorder and the VCR.

Note on tapes that are not recorded in the Digital8 Ð system
The picture may fluctuate. This is not a malfunction.

During playback of tapes recorded in the Hi8/standard 8 system
Digital signals are output as the image signals from the DV IN/OUT jack.

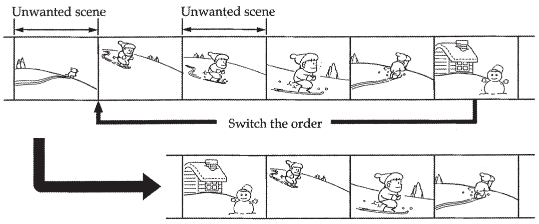
You can connect one VCR only using the i.LINK cable (DV connecting cable).
See page 136 for more infomation about i.LINK.

The following functions do not work during digital editing:
- Picture effect
- Digital effect
- PB ZOOM

If you record playback pause picture via the DV IN/OUT jack
The recorded picture becomes rough. Also, when you play back the recorded pictures on other video equipment, the picture may jitter.

Dubbing only desired scenes – Digital program editing

You can duplicate selected scenes (programs) for editing onto a tape without operating the VCR.
Scenes can be selected by frame. You can set up to 20 programs.



Before operating the Digital program editing function

Step 1 Connecting the VCR (p. 63).
Step 2 Setting the VCR for operation (p. 64, 68).
Step 3 Adjusting the synchronicity of the VCR (p. 69).
When you dub using the same VCR again, you can skip steps 2 and 3.

Using the Digital program editing function

Operation 1 Making the program (p. 71).
Operation 2 Performing Digital program editing (dubbing a tape) (p. 73).

Notes
- The Digital program editing works only for tapes recorded in the Digital8 Ð system.
- You cannot dub titles or display indicators.
- When you connect with an i.LINK cable (DV connecting cable), you may not be able to operate the dubbing function correctly, depending on the VCR.
  Set CONTROL to IR in the menu settings of your camcorder .
- When editing digital video, the operation signals cannot be sent with LANC Ⓛ.

Step 1: Connecting the VCR

You can connect both an A/V connecting cable and an i.LINK cable (DV connecting cable).
When you use the A/V connecting cable, connect the devices as illustrated in page 60.
When you use an i.LINK cable (DV connecting cable), connect the devices as illustrated in page 61.

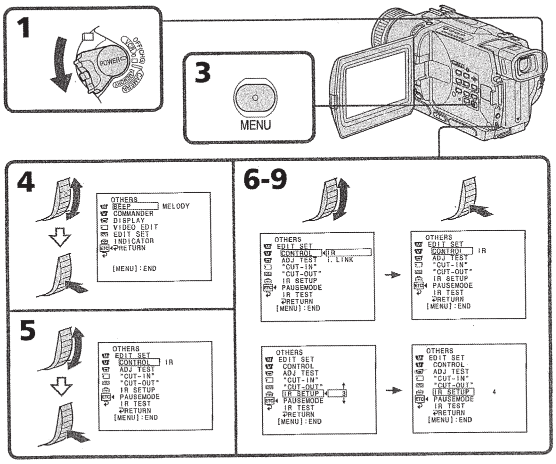
If you connect using an i.LINK cable (DV connecting cable)
With a digital-to-digital connection, video and audio signals are transmitted in digital format for high-quality editing.

Step 2: Setting the VCR to operate with the A/V connecting cable

To edit using the VCR, send the control signal by infrared ray to the remote sensor on the VCR.
When you connect using an A/V connecting cable, follow the procedure below, (1) to (4), to send the control signal correctly.

(1) Set the IR SETUP code

① Set the POWER switch to VCR on your camcorder.
② Turn the power of the connected VCR on, then set the input selector to LINE. When you connect a video camera recorder, set its POWER switch to VCR/VTR.
③ Press MENU to display the menu.
④ Turn the SEL/PUSH EXEC dial to select ETC, then press the dial.
⑤ Turn the SEL/PUSH EXEC dial to select EDIT SET, then press the dial.
⑥ Turn the SEL/PUSH EXEC dial to select CONTROL, then press the dial.
⑦ Turn the SEL/PUSH EXEC dial to select IR, then press the dial.
⑧ Turn the SEL/PUSH EXEC dial to select IR SETUP, then press the dial.
⑨ Turn the SEL/PUSH EXEC dial to select the IR SETUP code number of your VCR, then press the dial.
Check the code in "About the IR SETUP code." (P. 65)



About the IR SETUP code
The IR SETUP code is stored in the memory of your camcorder. Be sure to set the correct code depending on your VCR. Default setting is code number 3.

Brand	IR SETUP code
Sony	1, 2, 3, 4, 5, 6
Admiral (M. Wards)	89
Aiwa	80
Audio Dynamic	21, 35
Bell & Howell (M. Wards)	36
Brocsonic	70, 82
Canon	77, 78, 97
Citizen	47
Craig	73, 47
Curtis Mathis	8, 80, 77
Daewoo	26, 40, 77
DBX	21, 33, 35
Dimensia	8
Emerson	26, 82, 59, 48, 70, 81
Fisher	36, 45, 37, 44
Funai	80
General Erectric	87, 8, 77, 32*, 94*
Goldstar	47
Hitachi	78, 8, 42
Instant Replay	77, 78
JC Penny	77, 42, 8, 36, 21, 33, 35
JVC	21, 12, 13, 14, 33, 35
Kenwood	21, 33, 47, 35
LXI (Sears)	80, 47, 42, 44, 45, 36, 37
Magnavox	83, 78, 77
Marantz	21, 33, 35
Marta	47
Memorex	77, 37
Minolta	42, 8
Mitsubishi/MGA	28, 22, 23, 24

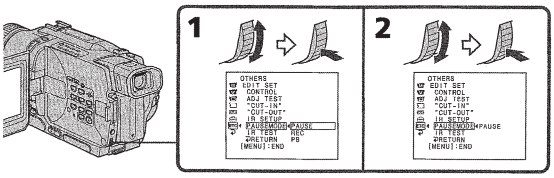
Brand	IR SETUP code
Multitech	23, 80, 32
NEC	21, 33, 35
Olympic	77, 78
Panasonic	16, 17, 78, 77, 96
Pentax	42, 8
Philco	78, 77
Philips	83, 78, 77
Pioneer	78
Quasar	78, 77, 16, 17
RCA/PROSCAN	8, 42, 16, 77, 83, 7, 40, 41, 78*
Realistic	77, 36
Sansui	21
Singer	73
Samsung	94, 41, 32, 32*, 94*, 24*
Sanyo	36, 37
Scott	40, 41, 32, 37, 28, 22, 23, 24
Sharp	89, 88
Shintom	73
Signature 2000 (M. Wards)	80, 89
Sylvania	83, 78, 77, 80
Symphonic	80
Tashiro	47
Tatung	21, 33, 35
Teac	21, 33, 80, 35
Technics	77, 78
Toshiba	40, 7
Wards	89, 88, 37, 95, 47
Yamaha	36, 21, 33, 35
Zenith	95

* TV/VCR component

Note on IR SETUP code
Digital program editing is not possible if the VCR does not support IR SETUP codes.

(2) Setting the modes to cancel recording pause on the VCR

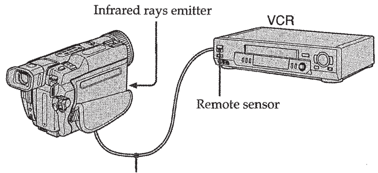
① Turn the SEL/PUSH EXEC dial to select PAUSEMODE, then press the dial.
② Turn the SEL/PUSH EXEC dial to select the mode to cancel recording pause on the VCR, then press the dial.


1
OTHERS
EDIT SET
CONTROL
ADJ TEST
"CUT-IN"
"CUT-OUT"
IR SETUP
PAUSEMODE PAUSE
IR TEST REC
RETURN PB
[MENU] : END
2
OTHERS
EDIT SET
CONTROL
ADJ TEST
"CUT-IN"
"CUT-OUT"
IR SETUP
PAUSEMODE PAUSE
IR TEST
RETURN
[MENU] : END

Buttons for canceling recording pause on the VCR
The buttons vary depending on your VCR. To cancel recording pause:
– Select PAUSE if the button to cancel recording pause is ❚❚.
– Select REC if the button to cancel recording pause is ●.
– Select PB if the button to cancel recording pause is ►.

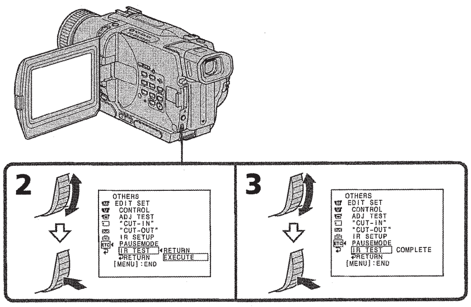
(3) Setting your camcorder and the VCR to face each other

Locate the infrared rays emitter of your camcorder and face it towards the remote sensor of the VCR.
Set the devices about 30 cm (11 7/8 in.) apart, and remove any obstacles between the devices.


Infrared rays emitter
VCR
Remote sensor
A/V connecting cable (supplied)

(4) Confirming VCR operation

① Insert a recordable tape into the VCR, then set to recording pause.
② Turn the SEL/PUSH EXEC dial to select IR TEST, then press the dial.
③ Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
If the VCR starts recording, the setting is correct.
When finished, the indicator on the screen changes to COMPLETE.

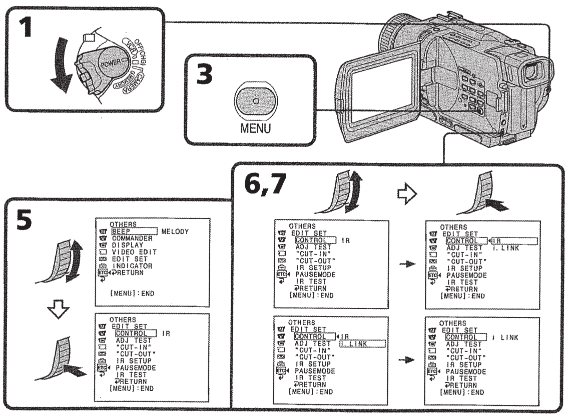

2
OTHERS
EDIT SET
CONTROL
ADJ TEST
"CUT-IN"
"CUT-OUT"
IR SETUP
PAUSEMODE
IR TEST RETURN
RETURN EXECUTE
[MENU] : END
3
OTHERS
EDIT SET
CONTROL
ADJ TEST
"CUT-IN"
"CUT-OUT"
IR SETUP
PAUSEMODE
IR TEST COMPLETE
RETURN
[MENU] : END

When the VCR does not operate correctly
- After checking the code in "About the IR SETUP code", set the IR SETUP or the PAUSEMODE again.
- Place your camcorder at least 30 cm (11 7/8 in.) away from the VCR.
- Refer to the operating instructions of your VCR.

Step 2: Setting the VCR to operate with the i.LINK cable (DV connecting cable)

When you connect using an i.LINK cable (DV connecting cable) (optional), follow the procedure below.

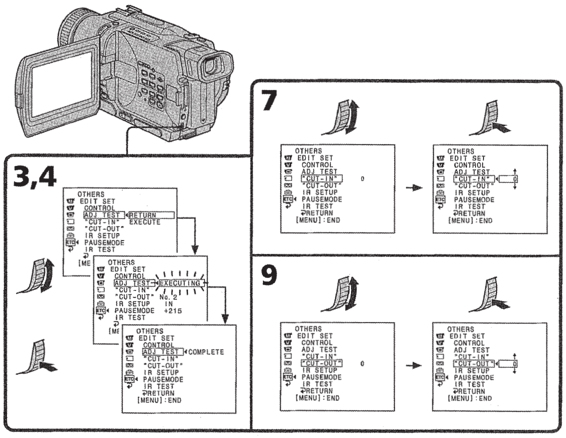
(1) Set the POWER switch to VCR on your camcorder .
(2) Turn the power of the connected VCR on, then set the input selector to DV input.
When you connect a digital video camera recorder, set its POWER switch to VCR/VTR.
(3) Press MENU to display the menu.
(4) Turn the SEL/PUSH EXEC dial to select ETC, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select EDIT SET, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select CONTROL, then press the dial.
(7) Turn the SEL/PUSH EXEC dial to select i.LINK, then press the dial.


1
POWER
3
MENU
5
OTHERS
BEEP MELODY
COMMANDER
DISPLAY
VIDEO EDIT
EDIT SET
INDICATOR
RETURN
[MENU] : END
OTHERS
EDIT SET
CONTROL IR
ADJ TEST
"CUT-IN"
"CUT-OUT"
IR SETUP
PAUSEMODE
IR TEST
RETURN
[MENU] : END
6,7
CONTROL IR
CONTROL IR i. LINK
CONTROL i. LINK

Step 3: Adjusting the synchronicity of the VCR

You can adjust the synchronicity of your camcorder and the VCR. Have a pen and paper ready for notes. Before operation, eject the cassette from your camcorder.

(1) Set the POWER swtich to VCR on your camcorder.
(2) Insert a blank tape (or a tape you want to record over) into the VCR, then set to recording pause.
When you select i.LINK in CONTROL, you do not need to set to recording pause.
(3) Turn the SEL/PUSH EXEC dial to select ADJ TEST, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
IN and OUT are recorded on an image for 5 times each to calculate the numerical values for adjusting the synchronicity.
The EXECUTING indicator flashes on the screen. When finished, the indicator changes to COMPLETE.
(5) Rewind the tape in the VCR, then start slow playback.
Take a note of the opening numerical value for each IN and the closing numerical value for each OUT.
(6) Calculate the average of all the opening numerical values for each IN, and the average of all the closing numerical values for each OUT.
(7) Turn the SEL/PUSH EXEC dial to select "CUT-IN", then press the dial.
(8) Turn the SEL/PUSH EXEC dial to select the average numerical value of IN, then press the dial.
The calculated start position for recording is set.
(9) Turn the SEL/PUSH EXEC dial to select "CUT-OUT", then press the dial.
(10) Turn the SEL/PUSH EXEC dial to select the average numerical value of OUT, then press the dial.
The calculated stop position for recording is set.
(11) Turn the SEL/PUSH EXEC dial to select ↩ RETURN, then press the dial.

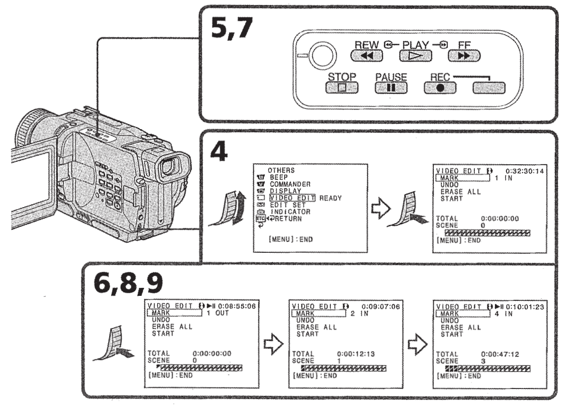


Notes

- When you complete step 3, the image to adjust the syncronicity is recorded for about 50 seconds.
- If you start recording from the very beginning of the tape, the first few seconds of the tape may not record properly. Be sure to allow about 10 seconds' of lead before starting the recording.
- When you connect using an i.LINK cable (DV connecting cable) you may not be able to operate the dubbing function correctly, depending on the VCR.
  Keep the i.LINK connection, and set CONTROL to IR in the menu settings. (p. 79)
  Video and audio signals are transmitted in digital format.

Operation 1: Making the program

(1) Insert the tape for playback into your camcorder, and insert a tape for recording into the VCR.
(2) Press MENU to display the menu.
(3) Turn the SEL/PUSH EXEC dial to select ETC, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select VIDEO EDIT, then press the dial.
(5) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
(6) Press the SEL/PUSH EXEC dial.
The IN point of the first program is set, and the top part of the program mark changes to light blue.
(7) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
(8) Press the SEL/PUSH EXEC dial.
The OUT point of the first program is set, then the bottom part of the program mark changes to light blue.
(9) Set the program by repeating steps 5 to 8.
When the program is set, the program mark changes to light blue.
You can set a maximum of 20 programs.



Erasing the program you have set

Erase OUT first and then IN from the last set program.

(1) Turn the SEL/PUSH EXEC dial to select UNDO, then press the dial.
(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
The last set program mark flashes, then the setting is canceled.

To cancel erasing
Select RETURN in step 2.

Erasing all programs

(1) Select VIDEO EDIT in the menu settings. Turn the SEL/PUSH EXEC dial to select ERASE ALL, then press the dial.
(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
All the program marks flash, then the settings are canceled.

To cancel erasing all programs
Select RETURN in step 2.

To cancel a program you have set
Press MENU.
The program is stored in memory until the tape is ejected.

Notes

- The Digital program editing does not work when PB MODE is set to Hi8/8 in the menu settings.
- You cannot operate recording during Digital program editing.

You cannot set IN or OUT to the following portions of the tape:
– a blank portion of the tape
– a portion recorded in a system other than Digital8

The total time code may not be displayed correctly in the following cases:
– there is a blank portion between IN and OUT on the tape
– the tape is not recorded in the Digital8 system.

Operation 2: Performing Digital program editing (Dubbing a tape)

Make sure that your camcorder and VCR are connected, and that the VCR is set to recording pause. This procedure is not necessary when you use an i.LINK cable (DV connecting cable).
When you use a digital video camera recorder, set its POWER switch to VCR/VTR.

(1) Select VIDEO EDIT. Turn the SEL/PUSH EXEC dial to select START, then press the dial.
(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first program, then start dubbing.
The program mark flashes.
The SEARCH indicator appears during a search, and the EDIT indicator appears during editing on the screen.
The program mark changes to light blue after dubbing is complete.
When dubbing ends, your camcorder and the VCR automatically stop.

To stop dubbing during editing

Press ■ on your camcorder.

To quit the Digital program editing function

Your camcorder stops when dubbing is complete. Then the display returns to VIDEO EDIT in the menu settings.
Press MENU to quit the Digital program editing function.

You cannot record on the VCR when:
– The tape has run out.
– The write-protect tab on the cassette is set to lock.
– The IR SETUP code is not correct. (when IR is selected)
– The button to cancel recording pause is not correct. (when IR is selected)

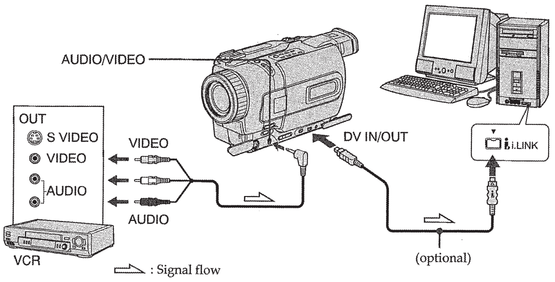
NOT READY appears on the screen when:
– The program to operate Digital program editing has not yet been made.
– i.LINK is selected but an i.LINK cable (DV connecting cable) is not connected.
– The power of the connected VCR is not turned on. (when you set i.LINK)

Using with analog video unit and your computer – Signal convert function

You can capture images and sound from an analog video unit connected to your computer which has the i. LINK (DV) jack to your camcorder.

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Set the POWER switch to VCR.
(2) Set A/V → DV OUT in 🅅 to ON in the menu settings. (P. 79)
(3) Start playback on the analog video unit.
(4) Start capturing procedures on your computer.
The operation procedures depend on your computer and the software which you use.
For details on how to capture images, refer to the instruction manual of your computer and software.



After capturing images and sound

Stop capturing procedares on your computer, and stop the playback on the analog video unit.

Notes

- You need to install software which can exchange video signals.
- Depending on the condition of the analog video signals, the computer may not be able to output the images correctly when you convert analog video signals into digital video signals via your camcorder. Depending on the analog video unit, the image may contain noise or incorrect colors.
- You cannot record or capture the video output via your camcorder when the video includes copyright protection signals such as ID-2 system.

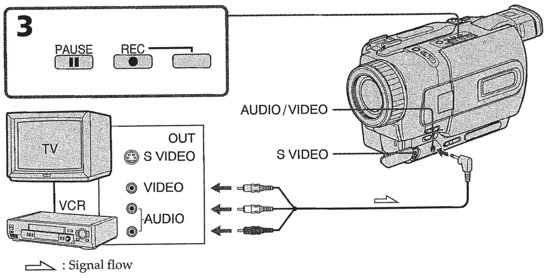
Recording video or TV programs

Using the A/V connecting cable

You can record a tape from another VCR or a TV program from a TV that has video/audio outputs. Use your camcorder as a recorder.

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Insert a blank tape (or a tape you want to record over) into your camcorder. If you are recording a tape from the VCR, insert a recorded tape into the VCR.
(2) Set the POWER switch to VCR.
(3) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❚❚ on your camcorder.
(4) Press ▶ on the VCR to start playback if you are recording a tape from VCR. Select a TV program if you are recording from TV.
The picture from a TV or VCR appears on the screen of your camcorder.
(5) Press ❚❚ on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Notes

- To enable smooth transition, we recommend that you do not mix pictures recorded in the Hi8/standard 8 with the Digital8 Ð system on a tape.
- If you fast-forward or slow-playback on the other equipment, the image being recorded may fluctuate. When recording from other equipment, be sure to play back the original tape at normal speed.

If your VCR is a monaural type
Connect the yellow plug of the A/V connecting cable to the video output jack and the white or the red plug to the audio output jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and the red plug is connected, the right channel audio is output.

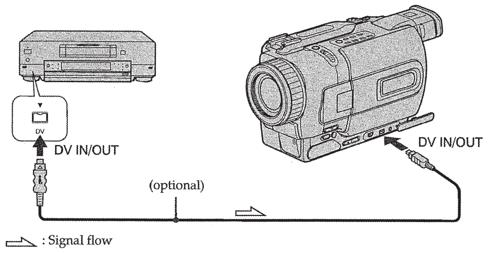
If your TV or VCR has an S video jack
Connect using an S video cable (optional) to obtain high-quality pictures.
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to DV IN/OUT and to DV IN/OUT of the DV products. With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Insert a blank tape (or a tape you want to record over) into your camcorder, and insert the recorded tape into the VCR.
(2) Set the POWER switch to VCR.
(3) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❚❚ on your camcorder.
(4) Press ▶ on the VCR to start playback.
The picture from a TV or VCR appears on the screen of your camcorder.
(5) Press ❚❚ on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

You can connect one VCR only using the i.LINK cable (DV connecting cable).

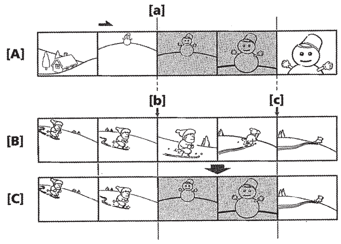
During digital editing
The color of the display may be uneven. However this does not affect the dubbed picture.

If you record playback pause picture with the DV IN/OUT jack
The recorded picture becomes rough. And when you play back the picture using your camcorder, the picture may jitter.

Before recording
Make sure if the DV IN indicator appears on the screen of your camcorder by pressing DISPLAY. The DV IN indicator may appear on both equipment.

Inserting a scene from a VCR – Insert Editing

You can insert a new scene from a VCR onto your originally recorded tape by specifying the insert start and end points.
Use the Remote Commander for this operation.
Connections are the same as in "Recording video or TV programs" on page 75, 76.
Insert a cassette containing the desired scene to insert into the VCR.



[A]: A tape that contains the scene to be superimposed
[B]: A tape before editing
[C]: A tape after editing

Inserting a scene from a VCR – Insert Editing

(1) Set the POWER switch to VCR.

(2) On the VCR, locate just before the insert start point **[a]**, then press ❙❙ to set the VCR to the playback pause mode.

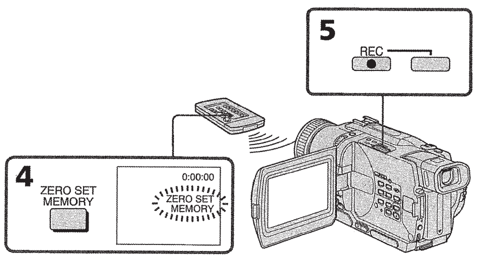
(3) On your camcorder, locate the insert end point **[c]** by pressing ◀◀ or ▶▶. Then press ❙❙ to set it to the playback pause mode.

(4) Press ZERO SET MEMORY on the Remote Commander. The ZERO SET MEMORY indicator flashes and the end point of the insert is stored in memory.

(5) On your camcorder, locate the insert start point **[b]** by pressing ◀◀, then press ● REC and the button on its right simultaneously to set your camcorder to the recording pause mode.

(6) First press ❙❙ on the VCR, and after a few seconds press ❙❙ on your camcorder to start inserting the new scene.

Inserting automatically stops near the zero point on the counter. Your camcorder automatically stops. The end point **[c]** of the insert stored in memory is canceled.



To change the insert end point

Press ZERO SET MEMORY again after step 5 to erase the ZERO SET MEMORY indicator and begin from step 3.

Notes

- The zero set memory function works only for tapes recorded in the Digital8 ⅅ system.
- The picture and sound recorded on the section between the insert start and end points will be erased when you insert the new scene.

When the inserted picture is played back

The picture may be distorted at the end of the inserted section. This is not a malfunction.

To insert a scene without setting the insert end point

Skip step 3 and 4. Press ■ when you want to stop inserting.

Changing the menu settings

To change the mode settings in the menu settings, select the menu items with the SEL/PUSH EXEC dial. The default settings can be partially changed. First, select the icon, then the menu item and then the mode.

(1) In CAMERA, VCR or MEMORY (DCR-TRV330/TRV530 only) mode, press MENU.

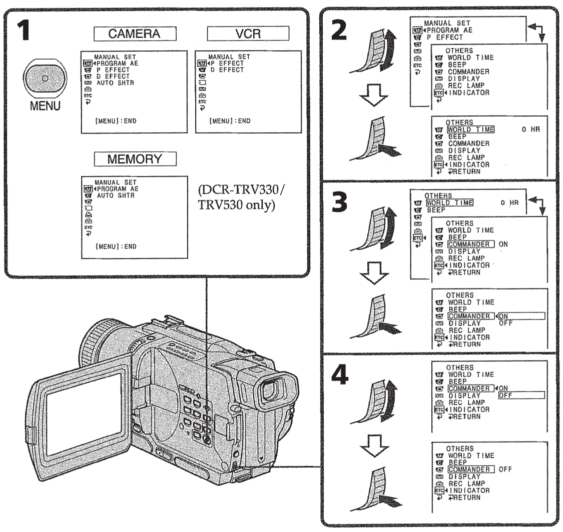
(2) Turn the SEL/PUSH EXEC dial to select the desired icon, then press the dial to set.

(3) Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial to set.

(4) Turn the SEL/PUSH EXEC dial to select the desired mode, and press the dial to set.

(5) If you want to change other items, select ⮐ RETURN and press the dial, then repeat steps from 2 to 4.

For details, see "Selecting the mode setting of each item" (p. 80).



Changing the menu settings

To make the menu display disappear

Press MENU.

Menu items are displayed as the following icons:

- MANUAL SET
- CAMERA SET
- VCR SET
- LCD/VF SET
- MEMORY SET (DCR-TRV330/TRV530 only)
- PRINT SET (DCR-TRV330/TRV530 only)
- TAPE SET
- SETUP MENU
- OTHERS

Selecting the mode setting of each item ● is the default setting.

Menu items differ according to the position of the POWER switch.
The screen shows only the items you can operate at the moment.

Icon/item	Mode	Meaning	POWER switch
PROGRAM AE	—	To suit your specific shooting requirement (p. 44)	CAMERA MEMORY
P EFFECT	—	To add special effects like those in films or on the TV to images (p. 40)	CAMERA VCR
D EFFECT	—	To add special effects using the various digital functions (p. 41)	CAMERA VCR
AUTO SHTR	● ON	To automatically activate the electronic shutter when shooting in bright conditions	CAMERA MEMORY
	OFF	To not automatically activate the electronic shutter even shooting in bright conditions	

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
SELFTIMER*	● OFF	Not to use the self-timer function	CAMERA MEMORY
	ON	To use the self-timer function	
D ZOOM	● OFF	To deactivate digital zoom. Up to 25× zoom is carried out.	CAMERA MEMORY
	50×	To activate digital zoom. More than 25× to 50× zoom is performed digitally. (p. 21)	
	700×	To activate digital zoom. More than 25× to 700× zoom is performed digitally. (p. 21)	
16:9WIDE	● OFF	—	CAMERA
	ON	To record a 16:9 wide picture (p. 36)	
STEADYSHOT	● ON	To compensate for camera-shake	CAMERA MEMORY
	OFF	To cancel the SteadyShot function. Natural pictures are produced when shooting a stationary object with a tripod.	
N.S. LIGHT	● ON	To use the NightShot Light function (p. 24)	CAMERA MEMORY
	OFF	To cancel the NightShot Light function	
FLASH MODE	● ON	To fire the flash (optional) regardless of the brightness of the surroundings	CAMERA MEMORY
	AUTO	The flash fires automatically	
	AUTO ◉	To fire the flash before recording to reduce the red-eye phenomenon	
FLASH LVL	HIGH	Makes the flash level higher than normal	CAMERA MEMORY
	● NORMAL	Normal setting	
	LOW	Makes the flash level lower than normal	

* DCR-TRV330/TRV530 only

Notes on the SteadyShot function

- The SteadyShot function will not correct excessive camera-shake.
- Attachment of a conversion lens (optional) may influence the SteadyShot function.

If you cancel the SteadyShot function

The SteadyShot off indicator appears on the screen. Your camcorder prevents excessive compensation for camera-shake.

Notes on FLASH MODE and FLASH LVL

- You cannot adjust FLASH MODE or FLASH LVL if the flash (optional) is not compatible with FLASH MODE or FLASH LVL.
- FLASH MODE and FLASH LVL are displayed only when an external flash (optional) is connected to the intelligent accessory shoe.

Icon/item	Mode	Meaning	POWER switch
HiFi SOUND	● STEREO	To play back a stereo tape or dual sound track tape with main and sub sound	VCR
	1	To play back a stereo tape with the left sound or a dual sound track tape with main sound	
	2	To play back a stereo tape with the right sound or a dual sound track tape with sub sound	
TBC*	● ON	To correct jitter	VCR
	OFF	To not correct jitter. Set TBC to OFF when playing back a tape on which you have dubbed over and recorded the signal of a TV game or similar machine.	
TBC stands for "Time Base Corrector".			
DNR*	● ON	To reduce picture noise	VCR
	OFF	To reduce a conspicuous afterimage when the picture has a lot of movement	
DNR stands for "Digital Noise Reduction".			
AUDIO MIX	—	To adjust the balance between the stereo 1 and stereo 2 	VCR
PB MODE	● AUTO	To automatically select the system (Hi8/standard 8 or Digital8) that was used to record on the tape, and play back the tape	VCR
	Hi8/8	To play back a tape that was recorded in the Hi8/standard 8 system when your camcorder does not automatically distinguish the recording system	
A/V → DV OUT	● OFF	To convert digital video signals into analog video signals via your camcorder.	VCR
	ON	To convert analog video signals into digital video siginals via your camcorder.	

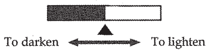
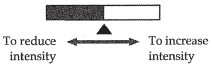
* When you play back tapes recorded in the Hi8/standard 8 system only.

Notes on AUDIO MIX

- When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance.
- You can adjust the balance only for tapes recorded in the Digital8 system.

Note on PB MODE

The mode will return to the default setting when:
–you remove the battery pack or power source.
–you turn the POWER switch.

Icon/item	Mode	Meaning	POWER switch
LCD BRIGHT	—	To adjust the brightness on the LCD screen with the SEL/PUSH EXEC dial. 	CAMERA VCR MEMORY
LCD B. L.	● BRT NORMAL	To set the brightness on the LCD screen backlight normal	CAMERA VCR MEMORY
	BRIGHT	To brighten the LCD screen backlight	
LCD COLOR	—	To adjust the color on the LCD screen, turning the SEL/PUSH EXEC dial to adjust the following bar 	CAMERA VCR MEMORY
VF B.L.	● BRT NORMAL	To set the brightness in the viewfinder normal	CAMERA VCR MEMORY
	BRIGHT	To brighten the viewfinder	
*** STILL SET**			
PIC MODE	● SINGLE	Not to record continuously	MEMORY
	MULTI SCRN	To record 9 images continuously (p. 94)	
QUALITY	● FINE	To record still images in the fine image quality mode	VCR MEMORY
	STANDARD	To record still images in the standard image quality mode (p. 91)	
FLD/FRAME	● FIELD	To record moving subjects correcting jitter	MEMORY
	FRAME	To record stopping subjects in high quality	
PRINT MARK	ON	To write a print mark on the recorded still images you want to print out later (p. 123)	VCR MEMORY
	● OFF	To cancel print marks on still images	
PROTECT	ON	To protect selected still images against accidental erasure (p. 119)	VCR MEMORY
	● OFF	Not to protect still images	

* DCR-TRV330/TRV530 only

Notes on LCD B.L. and VF B.L.

- When you select BRIGHT, battery life is reduced by about 10 percent during recording.
- When you use power sources other than the battery pack, BRIGHT is automatically selected.

Icon/item	Mode	Meaning	POWER switch
***SLIDE SHOW**	—	To play back images in a continuous loop (p. 118)	MEMORY
DELETE ALL	—	To delete all the images (p. 121)	MEMORY
FORMAT	● RETURN	To cancel formatting	MEMORY
	FORMAT	To format an inserted "Memory Stick." 1. Select FORMAT with the SEL/PUSH EXEC dial, then press the dial. 2. Turn the SEL/PUSH EXEC dial to select FORMAT, then press the dial. 3. After EXECUTE appears, press the SEL/PUSH EXEC dial. FORMATTING appears during formatting. COMPLETE appears when formatting is finished.	
PHOTO SAVE	—	To duplicate still images in the tape to "Memory Stick" (p. 105)	VCR
*** 9PIC PRINT**	● RETURN	To cancel prints of split screen	MEMORY
	SAME	To make prints of same split screen (p. 124)	
	MULTI	To make prints of different split screen	
	MARKED	To make prints of images with print marks in recording order	
DATE/TIME	● OFF	To make prints without the recording date and time	MEMORY
	DATE	To make prints with the recording date	
	DAY&TIME	To make prints with the recording date and time (p. 124)	

* DCR-TRV330/TRV530 only

Notes on formatting (DCR-TRV330/TRV530 only)

- Supplied or optional "Memory Stick"s have been formatted at factory. Formatting with this camcorder is not required.
- Do not turn the POWER switch or press any button while the display shows "FORMATTING".
- You cannot format the "Memory Stick" if the write-protect tab on the "Memory Stick" is set to LOCK.
- Format the "Memory Stick" if " FORMAT ERROR" appears.

Formatting erases all information on the "Memory Stick" (DCR-TRV330/TRV530 only)

Check the contents of the "Memory Stick" before formatting.

- Formatting erases sample images on the "Memory Stick."
- Formatting erases the protected image data on the "Memory Stick."

Note on PRINT SET (DCR-TRV330/TRV530 only)

9PIC PRINT and DATE/TIME are displayed only when an external printer (optional) is connected to the intelligent accessory shoe.

Icon/item	Mode	Meaning	POWER switch
REC MODE	● SP	To record in the SP (Standard Play) mode	CAMERA VCR
	LP	To increase the recording time to 1.5 times the SP mode	
AUDIO MODE	● 12BIT	To record or play back in the 12-bit mode (two stereo sounds)	CAMERA VCR*
	16BIT	To record or play back in the 16-bit mode (the one stereo sound with high quality)	
REMAIN	● AUTO	To display the remaining tape bar: • for about 8 seconds after your camcorder is turned on and calculates the remaining amount of tape • for about 8 seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape • for about 8 seconds after ► is pressed in VCR mode • for about 8 seconds after DISPLAY is pressed to display the screen indicators • for the period of tape rewinding, forwarding or picture search in the VCR mode	CAMERA VCR
	ON	To always display the remaining tape bar	
DATA CODE	● DATE/CAM	To display date, time and recording data during playback	VCR
	DATE	To display date and time during playback	

Note on REC MODE

When you record on the standard 8 8 tape, your camcorder records in the SP mode even you select the LP mode in the menu settings. In this case, the indicator "8mm TAPE → SP REC, Hi8 TAPE → LP/SP REC" appears on the screen. Use the Hi8 **Hi8** tapes for the LP mode.

Notes on the LP mode

- When you record a tape in the LP mode on your camcorder, we recommend playing the tape on your camcorder. When you play back the tape on other camcorders or VCRs, noise may occur in images or sound.
- When you record in the SP and LP modes on one tape or you record some scenes in the LP mode, the playback image may be distorted or the time code may not be written properly between scenes.

Note on AUDIO MODE

When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance in AUDIO MIX.

***To dub a tape to another VCR**

You cannot select AUDIO MODE for tapes recorded in the Digital8 system. You, however, can select AUDIO MODE when you dub tapes recorded in the Hi8/standard 8 system to another VCR using the i.LINK cable.

Icon/item	Mode	Meaning	POWER switch
CLOCK SET	—	To set the date or time (p. 17)	CAMERA MEMORY
AUTO TV ON	● OFF	—	CAMERA VCR MEMORY
	ON	To automatically turn on the Sony TV when using the super laser link function (p. 32)	
TV INPUT	● VIDEO1 VIDEO2 VIDEO3	To switch the video input on a Sony TV when using the super laser link function (p. 32)	CAMERA VCR MEMORY
	OFF	—	
LTR SIZE	● NORMAL	To display selected menu items in normal size	CAMERA VCR MEMORY
	2×	To display selected menu items at twice the normal size	
LANGUAGE	● ENGLISH	To display the following information indicators in English: REC, STBY, min, CAPTURE, END SEARCH and VOL	CAMERA VCR MEMORY
	FRANÇAIS	To display the information indicators in French	
	ESPAÑOL	To display the information indicators in Spanish	
	PORTUGUÊS	To display the information indicators in Portuguese	
	中文	To display the information indicators in Chinese	
DEMO MODE	● ON	To make the demonstration appear	CAMERA
	OFF	To cancel the demonstration mode	

Notes on DEMO MODE

- You cannot select DEMO MODE when a cassette is inserted in your camcorder.
- DEMO MODE is set to STBY (Standby) at the factory and the demonstration starts about 10 minutes after you have set the POWER switch to CAMERA without a cassette inserted.
  To cancel the demonstration, insert a cassette, set the POWER switch to other than CAMERA, or set DEMO MODE to OFF.
- When NIGHTSHOT is set to ON, the "NIGHTSHOT" indicator appears on the screen and you cannot select DEMO MODE in the menu settings.

Icon/item	Mode	Meaning	POWER switch
ETC WORLD TIME	—	To set the clock to the local time. Turn the SEL/PUSH EXEC dial to set a time difference. The clock changes by the time difference you set here. If you set the time difference to 0, the clock returns to the originally set time.	CAMERA MEMORY
BEEP	● MELODY	To output the melody when you start/stop recording or when an unusual condition occurs on your camcorder	CAMERA VCR MEMORY
	NORMAL	To output the beep instead of the melody	
	OFF	To cancel all sound including shutter sound	
COMMANDER	● ON	To activate the Remote Commander supplied with your camcorder	CAMERA VCR MEMORY
	OFF	To deactivate the Remote Commander to avoid remote control misoperation caused by other VCR's remote control	
DISPLAY	● LCD	To show the display on the LCD screen and in the viewfinder	CAMERA VCR MEMORY
	V-OUT/LCD	To show the display on the TV screen, LCD screen and in the viewfinder	
REC LAMP	● ON	To light up the camera recording lamp at the front of your camcorder	CAMERA MEMORY
	OFF	To turn the camera recording lamp off so that the subject is not aware of the recording	
VIDEO EDIT	—	To make program and perform video editing (p. 63)	VCR
EDIT SET	—	To adjust and set the synchronicity of your camcorder and a VCR for dubbing in edit set mode (p. 63)	VCR
INDICATOR	● BL OFF	To turn off the backlight on display window	CAMERA VCR MEMORY
	BL ON	To turn on the backlight	

Note

If you press DISPLAY with DISPLAY set to V-OUT/LCD in the menu settings, the picture from a TV or VCR will not appear on the screen even when your camcorder is connected to outputs on the TV or VCR. (Except when your camcorder is connected with the i. LINK cable)

In more than 5 minutes after removing the power source

The AUDIO MIX, FLASH LVL, COMMANDER and HiFi SOUND items are returned to their default settings.
The other menu items are held in memory even when the battery is removed.

Notes on INDICATOR

- When you select BL ON, battery life is reduced by about 10 percent during recording.
- When you use power sources other than the battery pack, BL ON is automatically selected.

— "Memory Stick" operations —

Using "Memory Stick"–introduction

– DCR-TRV330/TRV530 only

You can record and play back still images on the "Memory Stick" supplied with your camcorder. You can easily play back, record or delete still images. You can exchange image data with other equipment such as your computer etc., using the USB cable for "Memory Stick" supplied with your camcorder.

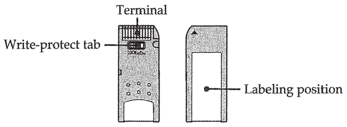
On file format (JPEG)

Your camcorder compresses image data in JPEG format (extension .jpg).

Typical image data file name

100-0001: This file name appears on the screen of your camcorder.
Dsc00001.jpg: This file name appears on the display of your computer.

Before using "Memory Stick"



- You cannot record or erase still images when the write-protect tab on the "Memory Stick" is set to LOCK.
- We recommend backing up important data.
- Image data may be damaged in the following cases:
  - If you remove the "Memory Stick", turn the power off, or detach the battery for replacement when the access lamp is flashing
  - If you use "Memory Stick"s near static electricity or magnetic fields.
- Prevent metallic objects or your finger from coming into contact with the metal parts of the connecting section.
- Stick its label on the labeling position.
- Do not bend, drop or apply strong shock to "Memory Stick"s.
- Do not disassemble or modify "Memory Stick"s.
- Do not let "Memory Stick"s get wet.
- Do not use or keep "Memory Stick"s in locations that are:
  - Extremely hot such as in a car parked in the sun or under the scorching sun
  - Under direct sunlight
  - Very humid or subject to corrosive gases
- When you carry or store a "Memory Stick", put it in its case.

"Memory Stick"s formatted by a computer

"Memory Stick"s formatted by Windows OS or Macintosh computers do not have a guaranteed compatibility with this camcorder.

Notes on image data compatibility

- Image data files recorded on "Memory Stick"s by your camcorder conform with the Design Rules for Camera File Systems universal standard established by the JEIDA (Japan Electronic Industry Development Association). You cannot play back on your camcorder still images recorded on other equipment (DCR-TRV890E/TRV900/TRV900E or DSC-D700/D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- If you cannot use the "Memory Stick" that has been used on other equipment, format the "Memory Stick" on your camcorder following the steps on page 84. Note that all images on the "Memory Stick" will be deleted if you format it.

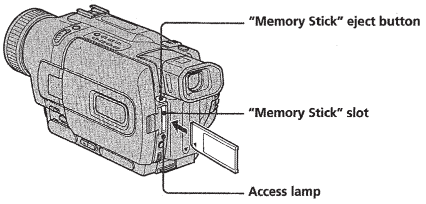
"Memory Stick" and are trademarks of Sony Corporation.

- Microsoft® and Windows® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Macintosh and Mac OS are trademarks of Apple Computer, Inc.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies.

Furthermore, "™" and "®" are not mentioned in each case in this manual.

Inserting "Memory Stick"

Insert a "Memory Stick" in the "Memory Stick" slot as far as it can go with the ▲ mark facing toward the "Memory Stick" slot as illustrated below.


"Memory Stick" eject button
"Memory Stick" slot
Access lamp

To eject the "Memory Stick"

Press the "Memory Stick" eject button. The "Memory Stick" pops up.

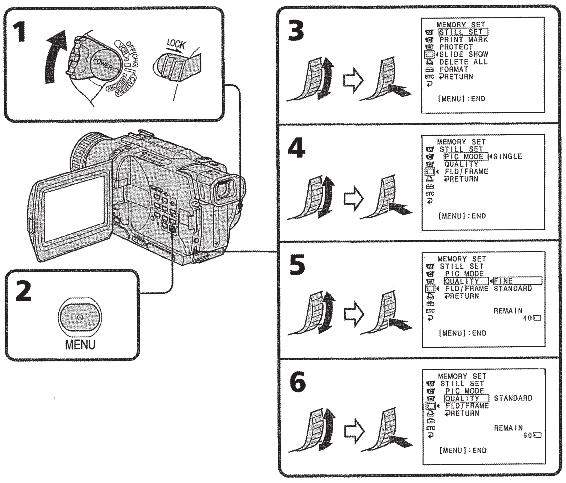
When the access lamp is lit or flashing
Do not shake or strike your camcorder because your camcorder is reading the data from the "Memory Stick" or recording the data on the "Memory Stick". Do not turn the power off, eject the "Memory Stick" or remove the battery pack. Otherwise, the image data breakdown may occur.

If "▣ MEMORY STICK ERROR" is displayed
The "Memory Stick" may be corrupted. If this occurs, use another "Memory Stick."

Selecting image quality mode

You can select image quality mode in still image recording. The default setting is FINE.

(1) Set the POWER switch to VCR or MEMORY. Make sure that the LOCK is set to the left (unlock) position.
(2) Press MENU to make the menu display appear.
(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select STILL SET, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select QUALITY, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select the desired image quality, then press the dial.


1
LOCK
POWER
2
MENU
3
MEMORY SET
STILL SET
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU] : END
4
MEMORY SET
STILL SET
PIC MODE
SINGLE
QUALITY
FLD/FRAME
RETURN
[MENU] : END
5
MEMORY SET
STILL SET
PIC MODE
QUALITY
FINE
FLD/FRAME
STANDARD
RETURN
REMAIN
40
[MENU] : END
6
MEMORY SET
STILL SET
PIC MODE
QUALITY
STANDARD
FLD/FRAME
RETURN
REMAIN
60
[MENU] : END

Note
In some cases, changing the image quality mode may not affect the image quality, depending on the types of images you are shooting.

Image quality settings

Setting	Meaning
FINE (FINE)	Use this mode when you want to record high quality images. The image is compressed to about 1/6.
STANDARD (STD)	This is the standard image quality. The image is compressed to about 1/10.

Differences in image quality mode
Recorded images are compressed in JPEG format before being stored into memory. The memory capacity allotted to each image varies depending on the selected image quality mode. Details are shown in the table below. (The number of pixels is 640 × 480, regardless of image quality mode. The data size before compression is about 600 KB.)

Image quality mode	Memory capacity
FINE	About 100 KB
STANDARD	About 60 KB

Approximate number of images you can record on a "Memory Stick"
The approximate number of images you can record on a "Memory Stick" formatted using this camcorder varies depending on which image quality mode you select and the complexity of the subject.

Maximum number of images you can record on a "Memory Stick"

Setting	4MB (supplied)	8MB	16MB	32MB	64MB
FINE	40	81	164	329	659
STANDARD	60	122	246	494	988

Note on the image quality mode indicator
This is only displayed during recording.

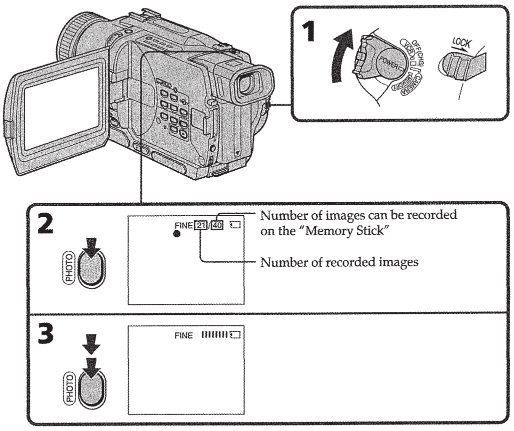
Recording still images on "Memory Stick" – Memory Photo recording

– DCR-TRV330/TRV530 only

You can select the FIELD or FRAME mode in still image recording. Your camcorder compensates for camera-shake when recording moving subjects in the FIELD mode. Your camcorder records still images in high quality in the FRAME mode. Select the FIELD or FRAME in the menu settings (p. 79).

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left (unlock) position.
(2) Keep pressing PHOTO lightly. The green ● mark stops flashing, then lights up. The brightness of the image and focus are adjusted, being targeted for the middle of the image and are fixed. Recording does not start yet.
(3) Press PHOTO deeper. The image displayed on the screen will be recorded on the "Memory Stick". Recording is complete when the bar scroll indicator disappears.


1
LOCK
POWER
2
PHOTO
FINE 21/40
Number of images can be recorded on the "Memory Stick"
Number of recorded images
3
PHOTO
FINE

Notes

- When recording fast-moving subjects in the FRAME mode, the recorded image blurry.
- When recording in the FRAME mode, your camcorder may not correct camera-shake. We recommend that you shoot objects with a tripod.
- When recording still images at step 2 with PHOTO pressed lightly, the image momentarily flickers. This is not a malfunction.

When the POWER switch is set to MEMORY

The following functions do not work:

– wide mode
– picture effect
– digital effect
– title
– low lux mode of PROGRAM AE.

When you are recording a still image

You can neither turn off the power nor press PHOTO.

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

Recording images continuously

You can record still images continuously.

Multi screen mode

You can record 9 still images continuously on a single page.

---

(1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left (unlock) position.
(2) Press MENU to make the menu display appear.
(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select STILL SET, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select PIC MODE, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select the desired setting, then press the dial.
(7) Press MENU to erase the menu display.
(8) Press PHOTO deeper.

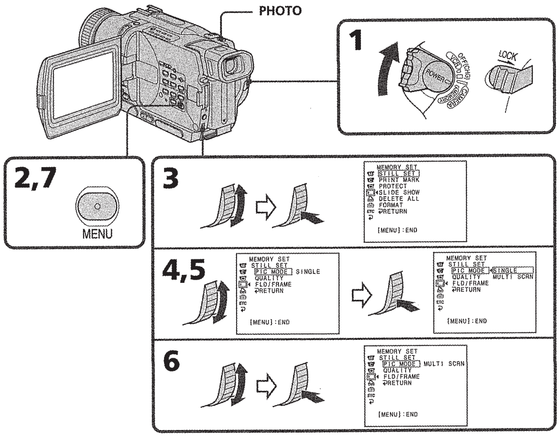


PHOTO
1
LOCK
POWER
VCR
OFF(CHG)
CAMERA
MEMORY
2,7
MENU
3
MEMORY SET
STILL SET
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU]:END
4,5
MEMORY SET
STILL SET
PIC MODE SINGLE
QUALITY
FLD/FRAME
RETURN
[MENU]:END
MEMORY SET
STILL SET
PIC MODE SINGLE
QUALITY MULTI SCRN
FLD/FRAME
RETURN
[MENU]:END
6
MEMORY SET
STILL SET
PIC MODE MULTI SCRN
QUALITY
FLD/FRAME
RETURN
[MENU]:END

If the capacity of the "Memory Stick" becomes full

"⍂ FULL" appears on the screen and you cannot record still images on the "Memory Stick".

Continuous shooting settings

Setting	Meaning (indicator on the screen)
SINGLE	Your camcorder shoots one image at a time. (no indicator)
MULTI SCRN	Your camcorder shoots 9 still images at about 0.5 sec intervals and displays the images on a single page divided into 9 boxes. (▦)

When recording in the multi screen mode

The image is recorded in the FIELD mode automatically even you select the FRAME mode in the menu settings.

Self-timer memory photo recording

You can record still images on "Memory Stick"s with the self-timer. You can use the Remote Commander for this operation.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left (unlock) position.
(2) Press MENU to display the menu settings in the standby mode.
(3) Turn the SEL/PUSH EXEC dial to select ▣, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select SELFTIMER, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(6) Press MENU to make the menu settings disappear.
(7) Press PHOTO deeper.
Self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep sound gets faster, then recording starts automatically.

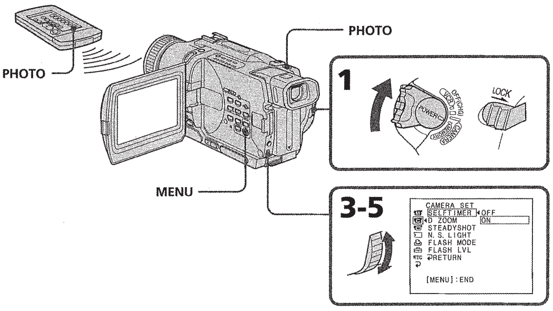


PHOTO
PHOTO
1
LOCK
POWER
VCR
OFF(CHG)
CAMERA
MEMORY
MENU
3-5
CAMERA SET
SELFTIMER OFF
D ZOOM ON
STEADYSHOT
N. S. LIGHT
FLASH MODE
FLASH LVL
RETURN
[MENU]:END

To cancel self-timer recording

Set SELFTIMER to OFF in the MENU settings while your camcorder is in the standby mode. You cannot cancel self-timer recording with Remote Commander.

Note

The self-timer recording mode is automatically cancelled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

To check the image to be recorded

You can check the image with pressing PHOTO lightly, then press it deeper to start the self-timer recording.

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

– DCR-TRV330/TRV530 only

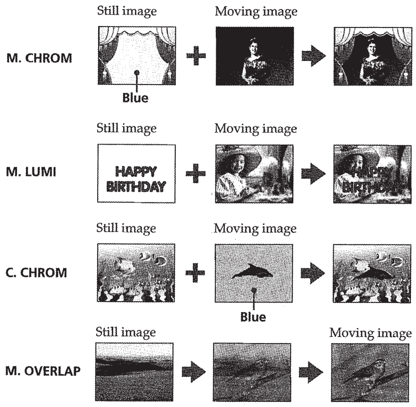
You can superimpose a still image you have recorded on the "Memory Stick" on top of the moving image you are recording. You can record the superimposed images on a tape or a "Memory Stick". (However, you can record only superimposed still images on the "Memory Stick".)

M. CHROM (Memory chroma key)
You can swap a blue area of a still image such as an illustration or a frame with a moving image.

M. LUMI (Memory luminance key)
You can swap a brighter area of a still image such as a handwritten illustlation or title with a moving image. Record a title on the "Memory Stick" before a trip or event for convenience.

C. CHROM (Camera chroma key)
You can superimpose a moving image on top of a still image such as an image can be used as background. Shoot the subject against a blue background. The blue area of the moving image will be swapped with a still image.

M. OVERLAP* (Memory overlap)
You can make a moving image fade in on top of a still image recorded on the "Memory Stick" as the overlap function.



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* The superimposed image using Memory overlap function can be recorded on tapes only.

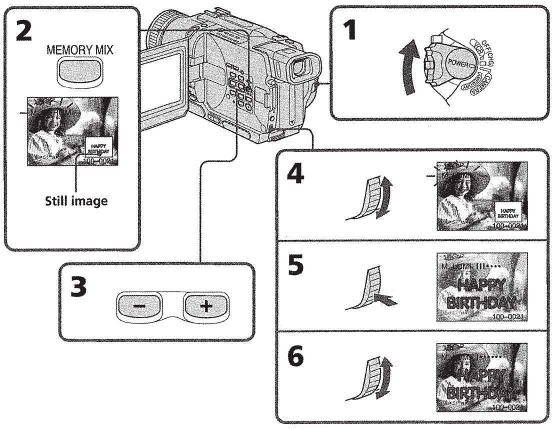
Recording superimposed images on a tape

Before operation
- Insert a Hi8 Hi8/Digital8 D tape for recording into your camcorder.
- Insert a "Memory Stick" is recorded still images into your camcorder.

(1) Set the POWER switch to CAMERA.
(2) Press MEMORY MIX in the standby mode.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
(3) Press MEMORY+/– to select the still image you want to superimpose.
To see the previous image, press MEMORY –. To see the next image, press MEMORY+.
(4) Turn the SEL/PUSH EXEC dial to select the desired mode.
The mode changes as follows:
M. CHROM ←→ M. LUMI ←→ C. CHROM ←→ M. OVERLAP
(5) Press the SEL/PUSH EXEC dial.
The still image is superimposed on the moving image.
(6) Turn the SEL/PUSH EXEC dial to adjust the effect.

M. CHROM – The color (blue) scheme of the area in the still image which is to be swapped with a moving image
M. LUMI – The color (bright) scheme of the area in the still image which is to be swapped with a moving image
C. CHROM – The color (blue) scheme of the area in the moving image which is to be swapped with a still image
M. OVERLAP – No adjustment necessary

The fewer bars there are on the screen, the stronger the effect.
(7) Press START/STOP to start recording.



To change the still image to superimpose

Do either of the following:
- Press MEMORY+/– before step 7.
- Press the SEL/PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To change the mode setting

Press the SEL/PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To cancel MEMORY MIX

Press MEMORY MIX.

The "Memory Stick" supplied with your camcorder stores 20 images
- For M. CHROM: 18 images (such as a frame) 100-0001~100-0018
- For C. CHROM: 2 images (such as a background) 100-0019~100-0020

Sample images
Sample images stored in the "Memory Stick" supplied with your camcorder are protected (p. 119).

When you select M.OVERLAP
You cannot change the still image or the mode setting.

During recording
You cannot change the mode setting.

To record the superimposed image as a still image
Press PHOTO in step 7.

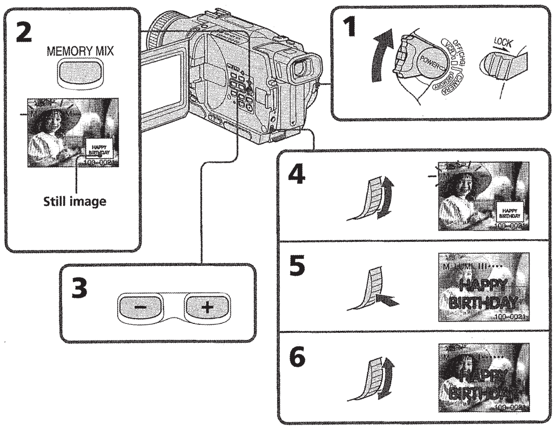
Recording superimposed images on a "Memory Stick" as a still image

Before operation
Insert a "Memory Stick" is recorded still images into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left position.
(2) Press MEMORY MIX in the standby mode.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
(3) Press MEMORY+/– to select the still image you want to superimpose.
To see the previous image, press MEMORY –. To see the next image, press MEMORY+.
(4) Turn the SEL/PUSH EXEC dial to select the desired mode.
The mode changes as follows:
M. CHROM ←→ M. LUMI ←→ C. CHROM
(5) Press the SEL/PUSH EXEC dial.
The still image is superimposed on the moving image.
(6) Turn the SEL/PUSH EXEC dial to adjust the effect.

M. CHROM – The color (blue) scheme of the area in the still image which is to be swapped with a moving image
M. LUMI – The color (bright) scheme of the area in the still image which is to be swapped with a moving image
C. CHROM – The color (blue) scheme of the area in the moving image which is to be swapped with a still image

The fewer bars there are on the screen, the stronger the effect.
(7) Press PHOTO deeper to start recording.



To change the still image to superimpose

Do either of the following:

- Press MEMORY+/– before step 7.
- Press the SEL/PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To change the mode setting

Press the SEL/PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To cancel MEMORY MIX

Press MEMORY MIX.

During recording
You cannot change the mode setting.

The "Memory Stick" supplied with your camcorder stores 20 images

- For M. CHROM: 18 images (such as a frame) 100-0001~100-0018
- For C. CHROM: 2 images (such as a background) 100-0019~100-0020

Sample images
Sample images stored in the "Memory Stick" supplied with your camcorder are protected (p. 119).

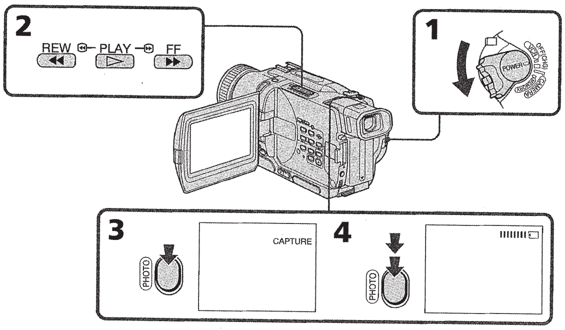
Recording an image from a tape as a still image

– DCR-TRV330/TRV530 only

Your camcorder can read moving image data recorded on a tape in the Digital8 ⅁ system, and record it as a still image on a "Memory Stick."
Your camcorder can also take in moving image data through the input connector and record it as a still image on a "Memory Stick."

Before operation
Insert a tape recorded in the Digital8 ⅁ system and a "Memory Stick" into your camcorder.

(1) Set the POWER switch to VCR.
(2) Press ►. The image recorded on the tape is played back.
(3) Keep pressing PHOTO lightly until the image from the tape freezes. "CAPTURE" appears on the screen. Recording does not start yet.
(4) Press PHOTO deeper. The image displayed on the screen will be recorded on the "Memory Stick". Recording is complete when the bar scroll indicator disappears.


2
REW
PLAY
FF
1
POWER
OFF(CHG)
VCR
MEMORY
CAMERA
3
PHOTO
CAPTURE
4
PHOTO

When the acccess lamp is lit or flashing
Do not shake or strike the unit. Also do not turn the power off , eject the "Memory Stick" or remove the battery pack. Otherwise, an image data breakdown may occur.

If ⚠ appears on the screen
The inserted "Memory Stick" is incompatible with your camcorder because its format does not comform with your camcorder. Check the format of the "Memory Stick".

If you press PHOTO lightly in the playback mode
Your camcorder stops momentarily.

Sound recorded on a tape
You cannot record the audio from a tape.

Titles superimposed on tapes
You cannot record the titles on the "Memory Stick." However, you can record titles which have already been recorded on tapes.

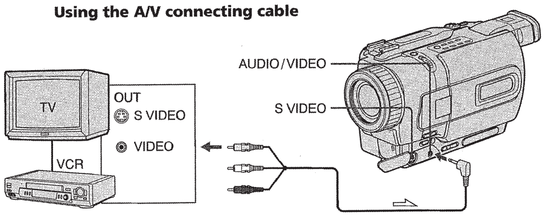
When you press PHOTO on the Remote Commander
Your camcorder immediately records the image that is on the screen when you press the button.

Recording a still image from other equipment

Before operation
Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

(1) Set the POWER switch to VCR.
(2) Play back the recorded tape, or turn the TV on to see the desired program. The image from TV or VCR appears on the screen of your camcorder.
(3) Follow the steps 3 and 4 on page 103.

Using the A/V connecting cable

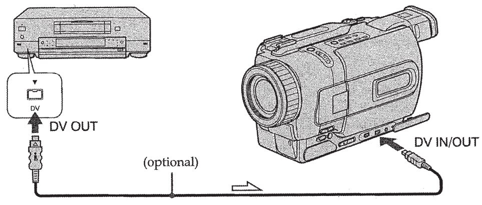

AUDIO/VIDEO
TV
OUT
S VIDEO
VIDEO
S VIDEO
VCR

⇨ : Signal flow

Connect the yellow plug of the A/V connecting cable to the video jack on the VCR or the TV.

If your TV or VCR has an S video jack
Connect using an S video cable (optional) to obtain high-quality pictures.
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Using the i.LINK cable (DV connecting cable)


DV
DV OUT
(optional)
DV IN/OUT

⇨ : Signal flow

Copying still images from a tape – Photo save

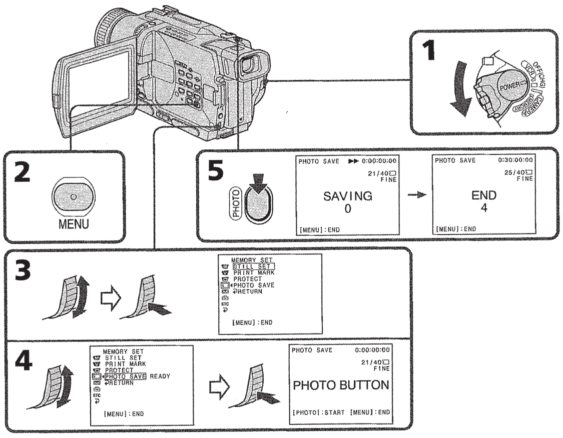
– DCR-TRV330/TRV530 only

Using the search function, you can automatically take in only still images from tapes recorded in the Digital8 ⅁ system and record them on a "Memory Stick" in sequence.

Before operation

- Insert a tape recorded in the Digital8 ⅁ system and rewind the tape.
- Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to VCR.
(2) Press MENU to make the menu display appear.
(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select PHOTO SAVE, then press the dial. PHOTO BUTTON appears on the screen.
(5) Press PHOTO deeper. The still image from the tape is recorded on the "Memory Stick". The number of still images copied is displayed. END is displayed when copying is completed.


1
POWER
OFF(CHG)
VCR
MEMORY
CAMERA
2
MENU
5
PHOTO
PHOTO SAVE ►► 0:00:00:00
21/40
FINE
SAVING
0
[MENU]:END
PHOTO SAVE 0:30:00:00
25/40
FINE
END
4
[MENU]:END
3
MEMORY SET
STILL SET
PRINT MARK
PROTECT
PHOTO SAVE
RETURN
ETC
[MENU]:END
4
MEMORY SET
STILL SET
PRINT MARK
PROTECT
PHOTO SAVE READY
RETURN
ETC
[MENU]:END
PHOTO SAVE 0:00:00:00
21/40
FINE
PHOTO BUTTON
[PHOTO]:START [MENU]:END

To stop copying

Press MENU to stop copying.

When the memory of the "Memory Stick" is full

"MEMORY FULL" appears on the screen, and the copying stops. Insert another "Memory Stick" and repeat the procedure from step 2.

When the access lamp is lit or flashing
Do not shake or strike your camcorder. As well do not turn the power off, eject the "Memory Stick" or remove the battery pack. Otherwise, the image data breakdown may occur.

If the write-protect tab on the "Memory Stick" is set to LOCK
"NOT READY" appears on the screen when you select PHOTO SAVE in the menu settings.

When you change the "Memory Stick" in the middle of copying
Your camcorder resumes copying from the last image recorded on the previous "Memory Stick".

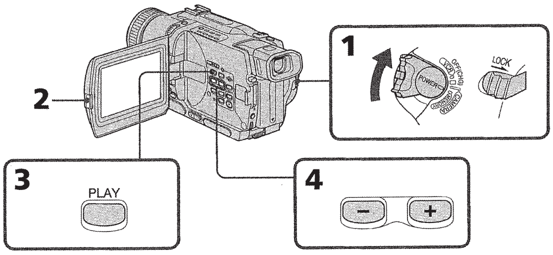
Viewing a still image – Memory Photo playback

– DCR-TRV330/TRV530 only

You can play back still images recorded on a "Memory Stick". You can also play back 6 images at a time by selecting the index screen.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK is set to the left (unlock) position.
(2) Open the LCD panel while pressing OPEN.
(3) Press MEMORY PLAY. The last recorded image is displayed.
(4) Press MEMORY +/– to select the desired still image. To see the previous image, press MEMORY –. To see the next image, press MEMORY +.



To stop memory photo playback

Press MEMORY PLAY.

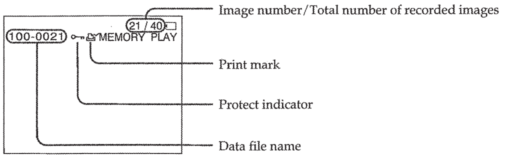
Notes on the file name
- The directory is not displayed if the structure of the directory does not conform to the DCF98 standard.
- "▭ ⊶ DIRECTORY ERROR" may appear on the screen if the structure of the directory does not conform to the DCF98 standard. While this message appears, you can play back images but cannot record them on the "Memory Stick".
- The file name flashes on the screen if the file is corrupted or the file is unreadable.

To play back recorded images on a TV screen
- Connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder before the operation.
- When operating memory photo playback on a TV or the LCD screen, the image quality may appear to have deteriorated. This is not a malfunction. The image data is as good as ever.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

If "▭ NO FILE" appears on the screen
No image is recorded on the "Memory Stick."

Image data modified with your computer or shot with other equipment
You may not be able to play them back with your camcorder.

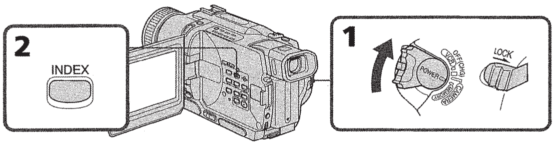
Screen indicators during still image playback



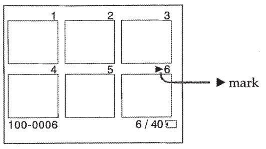
Playing back 6 recorded images at a time (index screen)

You can play back 6 recorded images at a time. This function is especially useful when searching for a particular image.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
(2) Press MEMORY INDEX to display the index screen.



A red ▶ mark appears above the image that is displayed before changing to the index screen mode.



- To display the following 6 images, keep pressing MEMORY +.
- To display the previous 6 images, keep pressing MEMORY –.

To return to the normal playback screen (single screen)

Press MEMORY +/– to move the ▶ mark to the image you want to display on full screen, then press MEMORY PLAY.

Note
When displaying the index screen, the number appears above each image. This indicates the order in which images are recorded on the "Memory Stick". These numbers are different from the data file names.

Image data modified with your computer or shot with other equipment
These files may not be displayed on the index screen.

Viewing images using your computer

– DCR-TRV330/TRV530 only

You can view data recorded on the "Memory Stick" using your computer.

On file format

Data recorded on the "Memory Stick" is stored in the JPEG format. Make sure that an application that supports JPEG file format is installed on your computer.

Recommended computer environment

Recommended Windows environment

OS: Microsoft Windows 98, Windows 98SE, Windows Me or Windows 2000 Professional standard installation is required.
Operation is not assured in an environment upgraded from:
Windows 3.1, Windows 95 to Windows 98 or Windows 98 to Windows 98SE.
Windows 95, Windows 98, Windows 98SE, Windows NT3.51 or Windows NT4.0 to Windows 2000 Professional.
CPU: MMX Pentium 200 MHz or faster
The USB connector must be provided as standard.

Recommended Macintosh environment

Macintosh computer with the Mac OS 8.5.1/8.6/9.0 standard installation.
However, note that the update to Mac OS 9.0 should be used for the following models.

- iMac with the Mac OS 8.6 standard installation and a slot loading type CD-ROM drive
- iBook or G4 with the Mac OS 8.6 standard installation

The USB connector must be provided as standard.

Notes

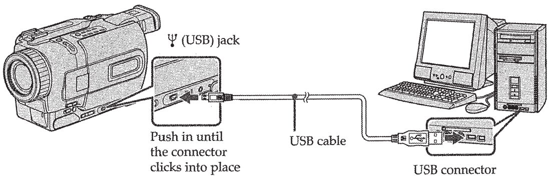
- Operations are not guaranteed for either the Windows or Macintosh environment if you connect 2 or more USB equipment to a single computer at the same time or when using a hub.
- Depending on the type of USB equipment that is used simultaneously, some equipment may not operate.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

Installing the USB driver

Before connecting your camcorder to your computer, install the USB driver to the computer. The USB driver is contained together with application software for viewing images on a CD-ROM which is supplied with your camcorder.

For Windows 98/98SE/Me and Windows 2000 users

(1) Turn on your computer and allow Windows to load.
(2) Insert the supplied CD-ROM in the CD-ROM drive of your computer.
(3) Launch the application program on CD-ROM. After a moment, the dialog box appears on your desktop. Set the cursor on "USB Driver Installation for Windows ® 98/98SE/Me and Windows ® 2000" and click.
(4) The Setup program starts. Complete the installation on CD-ROM.
(5) Connect the Ψ (USB) jack on your camcorder with the USB connector on your computer using the supplied USB cable.
(6) Insert a "Memory Stick" into your camcorder, connect the AC power adaptor and set the POWER switch to MEMORY.
"PC MODE" appears on the screen of your camcorder. Your computer recognizes the camcorder, and the Windows Add Hardware Wizard starts.
(7) The Add Hardware Wizard starts twice because 2 different USB drivers are installed. Be sure to allow the installation to complete without interrupting it.



Note

You cannot install the USB driver if a "Memory Stick" is not in your camcorder.
Be sure to insert a "Memory Stick" into your camcorder before installing the USB driver.

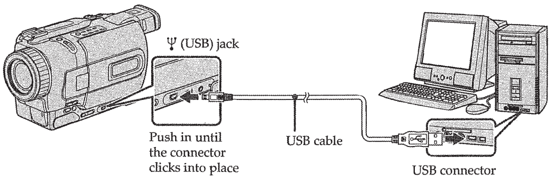
For Macintosh users

(1) Turn on your computer and allow the Mac OS to load.
(2) Insert the supplied CD-ROM in the CD-ROM drive of your computer.
(3) Double-click the CD-ROM drive icon to open the window.
(4) Double-click the icon of the hard disk containing the OS to open the window.
(5) Move the following 2 files from the window opened in step 3 to the System Folder icon in the window opened in step 4 (drag and drop).
  - Sony Camcorder USB Driver
  - Sony Camcorder USB Shim
(6) When "Put these items into the Extensions folder?" appears, click OK.
(7) Restart your computer.

Viewing images

For Windows 98 users

(1) Turn on the power of your computer and allow Windows 98 to load.
(2) Connect one end of the USB cable to the Ψ (USB) jack on the camcorder and the other end to the USB connector on your computer.
(3) Insert a "Memory Stick" into your camcorder, and connect the AC power adaptor to your camcorder and then to a wall outlet.
(4) Set the POWER switch to MEMORY.
"PC MODE" appears on the screen of your camcorder.
(5) Open "My Computer" on Windows 98 and double click the newly recognized drive. (Example: "Removable Disk (D:)")
The folders inside the "Memory Stick" are displayed.
(6) Select and double-click the desired image file from the folder. Double-click the folder or the file in the following order.
"Dcim" folder → "100msdcf" folder → Image file
For the detailed folder and file name, see "Image file storage destinations and image files" (p. 113).



Unplug the USB cable/Eject the "Memory Stick"

To unplug the USB cable or eject the "Memory Stick", follow the procedure below.

For Windows 2000 users

(1) Move the cursor to the "Unplug or Eject Hardware" icon on the TaskTray and click to cancel the applicable drive.
(2) A message to remove the device from the system appears, then unplug the USB cable or eject the "Memory Stick."

For Macintosh users

(1) Quit application programs opened.
Make sure that the access lamp of the hard disk does not lit.
(2) Drag and drop the "Memory Stick" icon to the Trash or select Eject under the Special menu.
(3) Eject the "Memory Stick."

Notes on using your computer

"Memory Stick"

- "Memory Stick" operations on your camcorder cannot be assured if the "Memory Stick" has been formatted on your computer.
- Do not optimize the "Memory Stick" on a Windows machine. This will shorten the "Memory Stick" life.
- Do not compress the data on the "Memory Stick." Compressed files cannot be played back on your camcorder.

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using a retouch software from your computer to the camcorder or when you directly modify the image on the camcorder, the image format will differ so a file error indicator may appear and you may be unable to open the file.

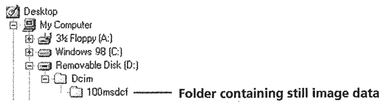
Communications with your computer

Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

Image file storage destinations and image files

Image files recorded with your camcorder are grouped in a folder.
The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

For Windows 98 users (The drive recognizing the camera is [D:])



```
Desktop
⊟ My Computer
   ⊞ 3½ Floppy (A:)
   ⊞ Windows 98 (C:)
   ⊟ Removable Disk (D:)
      ⊟ Dcim
         100msdcf ——— Folder containing still image data
```

Folder	File	Meaning
100msdcf	DSC0□□□□.JPG	Still image file

Copying the image recorded on "Memory Stick" to tapes

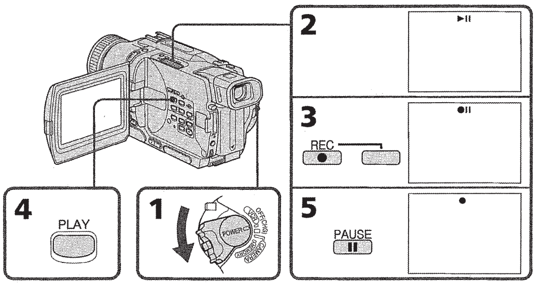
– DCR-TRV330/TRV530 only

You can copy still images or titles recorded on "Memory Stick"s and record them to Hi8 Hi8/Digital8 D tapes.

Before operation

Insert a Hi8 Hi8/Digital8 D tape for recording and a "Memory Stick" into your camcorder.

(1) Set the POWER switch to VCR.
(2) Using the video control buttons, search a point where you want to record the desired still image. Set the Hi8 Hi8/Digital8 D tape to playback pause mode.
(3) Press ● REC and the button on its right simultaneously on your camcorder. The Hi8 Hi8/Digital8 D tape is set to the recording pause mode.
(4) Press MEMORY PLAY to play back the still image you want to copy.
(5) Press ▮▮ to start recording and press ▮▮ again to stop.
(6) If you have more to copy, repeat steps 4 and 5.



To stop copying

Press ■.

During copying

You cannot operate the following buttons:
– MEMORY PLAY
– MEMORY INDEX
– MEMORY DELETE
– MEMORY +/–
– MEMORY MIX

Note on the index screen

You cannot record the index screen.

If you press EDITSEARCH during pause mode

Memory playback stops.

Image data modified with your computer or shot with other equipment

You may not be able to copy them with your camcorder.

If you press DISPLAY in the standby or recording mode

You can see memory playback and the file name indicators in addition to the indicators pertinent to Hi8 Hi8/Digital8 D tapes, such as the time code indicator.

When copying

You cannot copy the image recorded on "Memory Stick" with titles to tapes.

Enlarging still images recorded on "Memory Stick"s – Memory PB ZOOM

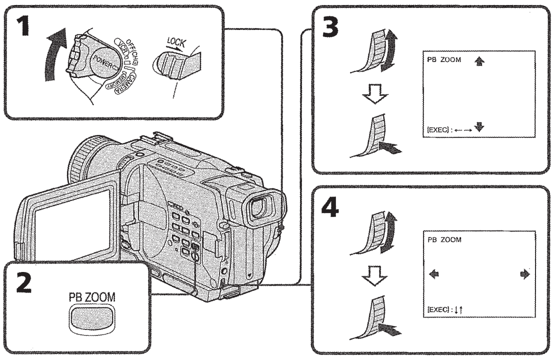
– DCR-TRV330/TRV530 only

You can enlarge still images recorded on a "Memory Stick."

Before operetion

Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK is set to the left (unlock) position.
(2) Press PB ZOOM on your camcorder while you are playing back images recorded on "Memory Stick." The still image is enlarged, and ↑ ↓ indicators showing the direction to move the image appear on the screen.
(3) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
↑ : The image moves downward.
↓ : The image moves upward.
← → becomes available.
(4) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
← : The image moves rightward. (Turn the dial downward.)
→ : The image moves leftward. (Turn the dial upward.)



To cancel memory PB ZOOM function

Press PB ZOOM.

Note

You cannot record the images enlarged by the PB ZOOM mode on "Memory Stick"s.

In the PB ZOOM mode

The digital effect function does not work.

The PB ZOOM function is cancelled when the following buttons are pressed:
– MENU
– MEMORY PLAY
– MEMORY INDEX
– MEMORY +/–

Pictures in the PB ZOOM mode

Pictures in the PB ZOOM mode are not output through the DV IN/OUT jack when the POWER switch is set to MEMORY.

Playing back images in a continuous loop – SLIDE SHOW

– DCR-TRV330/TRV530 only

You can automatically play back images in sequence. This function is useful especially when checking recorded images or during a presentation.

Before operation

Insert a "Memory Stick" into your camcorder.

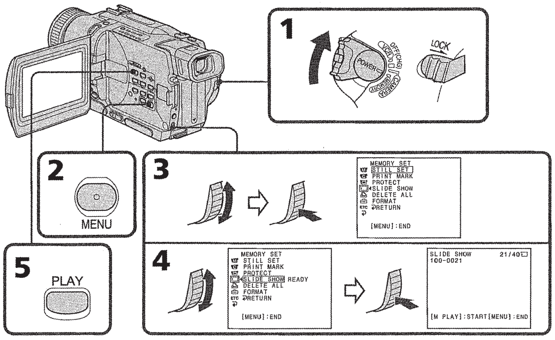
(1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left (unlock) position.

(2) Press MENU to make the menu display appear.

(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.

(4) Turn the SEL/PUSH EXEC dial to select SLIDE SHOW, then press the dial.

(5) Press MEMORY PLAY. Your camcorder plays back the images recorded on the "Memory Stick" in sequence.


1
LOCK
POWER
2
MENU
3
MEMORY SET
STILL SET
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU]:END
4
SLIDE SHOW READY
SLIDE SHOW 21/40
100-0021
[M PLAY]:START [MENU]:END
5
PLAY

To stop the slide show

Press MENU.

To pause during a slide show

Press MEMORY PLAY.

To start the slide show from a particular image

Select the desired image using MEMORY +/– buttons before step 2.

To view the recorded images on TV

Connect your camcorder to a TV with the A/V connecting cable supplied with your camcorder before operation.

If you change the "Memory Stick" during operation

The slide show does not operate. If you change the "Memory Stick", be sure to follow the steps again from the beginning.

Preventing accidental erasure – Image protection

– DCR-TRV330/TRV530 only

To prevent accidental erasure of important images, you can protect selected images.

Before operation

Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK is set to the left (unlock) position.

(2) Play back the image you want to protect.

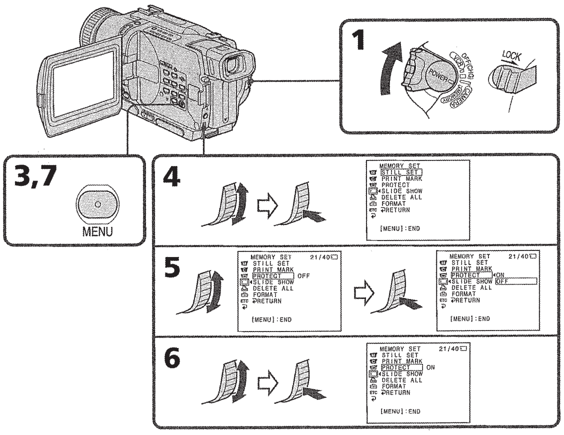
(3) Press MENU to make the menu display appear.

(4) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.

(5) Turn the SEL/PUSH EXEC dial to select PROTECT, then press the dial.

(6) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.

(7) Press MENU to erase the menu display. The ⊶ mark is displayed beside the data file name of the protected image.


1
LOCK
POWER
3,7
MENU
4
MEMORY SET
STILL SET
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU]:END
5
21/40
PROTECT OFF
ON
OFF
6
PROTECT ON

To cancel image protection

Select OFF in step 6, then press the SEL/PUSH EXEC dial.

Note

Formatting erases all information on the "Memory Stick", including the protected image data. Check the contents of the "Memory Stick" before formatting.

If the write-protect tab on the "Memory Stick" is set to LOCK

You cannot carry out image protection.

Deleting images

– DCR-TRV330/TRV530 only

You can delete images stored in a "Memory Stick."

Before operation

Insert a "Memory Stick" into your camcorder.

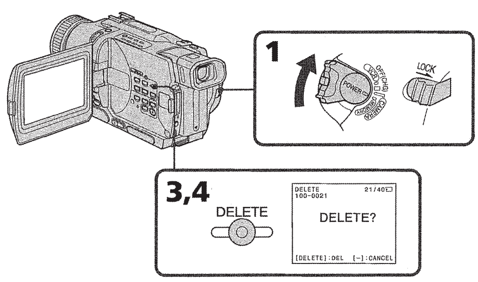
Deleting selected images

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK is set to the left (unlock) position.

(2) Play back the image you want to delete.

(3) Press MEMORY DELETE. "DELETE?" appears on the screen.

(4) Press MEMORY DELETE again. The selected image is deleted.


1
LOCK
POWER
3,4
DELETE
DELETE 21/40
100-0021
DELETE?
[DELETE]:DEL [–]:CANCEL

To cancel deleting an image

Press MEMORY – in step 4.

To delete an image displayed on the index screen

Press MEMORY +/– to move the ▶ indicator to the desired image and follow steps 3 and 4.

Notes

- To delete a protected image, first cancel image protection.
- Once you delete an image, you cannot restore it. Check the images to delete carefully before deleting them.

Deleting all the images

You can delete all the unprotected images in the "Memory Stick".

(1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left (unlock) position.

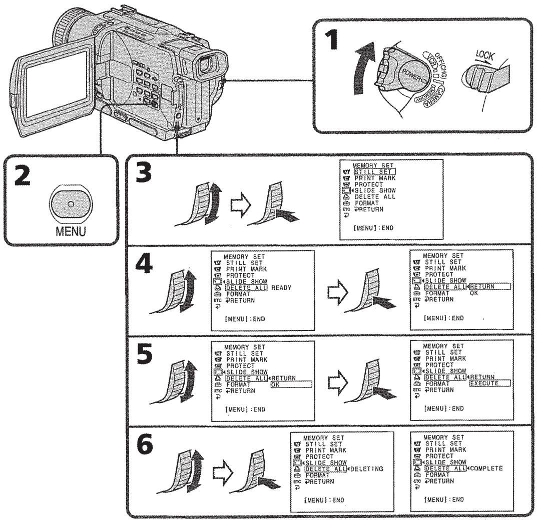
(2) Press MENU to make the menu display appear.

(3) Turn the SEL/PUSH EXEC dial to select ▭, then press the dial.

(4) Turn the SEL/PUSH EXEC dial to select DELETE ALL, then press the dial.

(5) Turn the SEL/PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.

(6) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial. DELETING appears on the screen. When all the unprotected images are deleted, COMPLETE is displayed.


1
LOCK
POWER
2
MENU
3
MEMORY SET
STILL SET
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
[MENU]:END
4
DELETE ALL READY
RETURN
OK
5
EXECUTE
6
DELETING
COMPLETE

To cancel deleting all the images in the "Memory Stick"

Select RETURN in step 5, then press the SEL/PUSH EXEC.

While DELETING appears
Do not turn the POWER switch or press any buttons.

If the write-protect tab on the "Memory Stick" is set to LOCK
You cannot delete images.

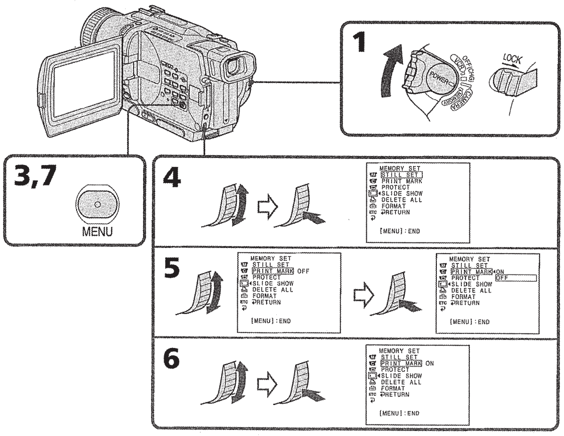
Writing a print mark – PRINT MARK

– DCR-TRV330/TRV530 only

You can specify the recorded still image to print out. This function is useful for printing out still images later.
Your camcorder conforms with the DPOF (Digital Print Order Format) standard for specifying the still images to print out.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK is set to the left (unlock) position.
(2) Play back the image you want to write a print mark.
(3) Press MENU to display the menu.
(4) Turn the SEL/PUSH EXEC dial to select ▣, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select PRINT MARK, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(7) Press MENU to erase the menu display. The ▣ mark is displayed beside the data file name of the image with a print mark.


1
POWER
OFF(CHG)
VCR
MEMORY
CAMERA
LOCK
3,7
MENU
4
MEMORY SET
STILL SET
PRINT MARK
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
ETC
[MENU] : END
5
MEMORY SET
STILL SET
PRINT MARK OFF
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
ETC
[MENU] : END
MEMORY SET
STILL SET
PRINT MARK ON
PROTECT OFF
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
ETC
[MENU] : END
6
MEMORY SET
STILL SET
PRINT MARK ON
PROTECT
SLIDE SHOW
DELETE ALL
FORMAT
RETURN
ETC
[MENU] : END

To cancel writing print marks

Select OFF in step 6, then press the SEL/PUSH EXEC dial.

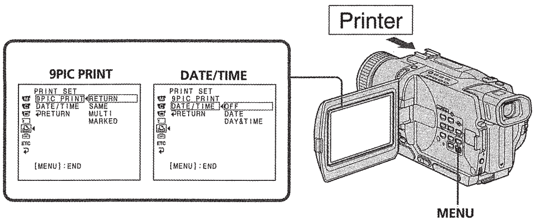
If the write-protect tab on the "Memory Stick" is set to LOCK
You cannot write print marks on still images.

Using the printer (optional)

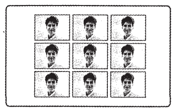
– DCR-TRV330/TRV530 only

You can use the printer (optional) on your camcorder to print images on the print paper.
For details, refer to the operating instructions of the printer.
There are various ways of printing still images. The following, however, describes how to print by selecting ▣ in the menu on your camcorder. (p. 79)

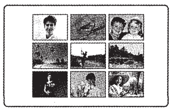
Before operation
- Insert a recorded "Memory Stick" into your camcorder.
- Connect the printer to your camcorder as illustrated.


Printer
9PIC PRINT
PRINT SET
9PIC PRINT
DATE/TIME
RETURN
RETURN
SAME
MULTI
MARKED
ETC
[MENU] : END
DATE/TIME
PRINT SET
9PIC PRINT
DATE/TIME
RETURN
OFF
DATE
DAY&TIME
ETC
[MENU] : END
MENU

You can print 9 still images on the 9 split print paper. Select the desired mode in the menu settings.



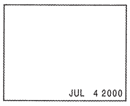
SAME PICS



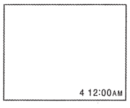
MULTI PICS or *MARKED PICS

* 9 still images with print marks are printed together.

You can make prints with the recording date and/or recording time. Select the desired mode in the menu settings.



DATE



DAY & TIME

— Troubleshooting —

Types of trouble and their solutions

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem persists, disconnect the power source and contact your Sony dealer or local authorized Sony service facility. If "C:□□:□□" appears on the screen or the display window, the self-diagnosis display function has worked. See page 130.

In the recording mode

Symptom	Cause and/or Corrective Actions
START/STOP does not operate.	• The POWER switch is not set to CAMERA. → Set it to CAMERA. (p. 19) • The tape has run out. → Rewind the tape or insert a new one. (p. 18, 27) • The write-protect tab is set to expose the red mark. → Use a new tape or slide the tab. (p. 18) • The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 139)
The power goes off.	• While being operated in CAMERA mode, your camcorder has been in the standby mode for more than 3 minutes. → Set the POWER switch to OFF (CHG) and then to CAMERA again. (p. 19) • The battery pack is dead or nearly dead. → Install a fully charged battery pack. (p. 11, 12)
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. → Adjust the viewfinder lens. (p. 22)
The SteadyShot function does not work.	• STEADYSHOT is set to OFF in the menu settings. → Set it to ON. (p. 79) • 16:9WIDE is set to ON in the menu settings. → Set it to OFF. (p. 79)
The autofocusing function does not work.	• FOCUS is set to MANUAL. → Set it to AUTO. (p. 47) • Shooting conditions are not suitable for autofocus. → Set FOCUS to MANUAL to focus manually. (p. 47)
The picture does not appear in the viewfinder.	• The LCD panel is open. → Close the LCD panel. (p. 20)
You cannot record in the LP mode.	• The tape is the standard 8 tape. → Use Hi8 **Hi8**/Digital8 **D** tapes. (p. 85)
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background.	• The contrast between the subject and background is too high. This is not a malfunction.
A vertical band appears when you shoot a very bright subject.	• This is not a malfunction.
Some tiny white spots appear on the screen.	• Slow shutter, low lux or Super NightShot mode is activated. This is not a malfunction.

(Continued on the following page)

Symptom	Cause and/or Corrective Actions
An unknown picture is displayed on the screen.	• If 10 minutes elapse after you set the POWER switch to CAMERA or DEMO MODE is set to ON in the menu settings without a cassette inserted, your camcorder automatically starts the demonstration. → Insert a cassette and the demonstration stops. You can also cancel DEMO MODE. (p. 79)
The picture is recorded in incorrect or unnatural colors.	• NIGHTSHOT is set to ON. → Set it to OFF. (p. 23)
Picture appears too bright, and the subject does not appear on the screen.	• NIGHTSHOT is set to ON in a bright place. → Set it to OFF. (p. 23) • The backlight function is active. → Set it off. (p. 23)
The click of the shutter does not sound.	• BEEP is set to OFF in the menu settings. → Set it to MELODY or NORMAL. (p. 79)
A horizontal black band appears when shooting a TV screen or computer screen.	• Set STEADYSHOT to OFF in the menu setting. (P. 79)
An external flash (optional) does not work.	• The power of the external flash (optional) is off or the power source does not installed. → Turn on the external flash or install the power source. • Two or more external flashes (optional) are attached. → Only one external flash (optional) can be attached. • AUTO is selected in FLASH MODE in the menu settings while recording in a bright place. → Set it to ON. (p. 79)

In the playback mode

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	• The POWER switch is not set to VCR. → Set it to VCR. (p. 27)
The playback button does not work.	• The tape has run out. → Rewind the tape. (p. 27)
There are horizontal lines on the picture or the playback picture is not clear or does not appear.	• The video head may be dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (optional). (p. 140)
No sound or only a low sound is heard when playing back a tape.	• The stereo tape is played back with HiFi SOUND set to 2 in the menu settings. → Set it to STEREO. (p. 79) • The volume is turned to minimum. → Press VOLUME +. (p. 27) • AUDIO MIX is set to ST2 side in the menu settings. → Adjust AUDIO MIX. (p. 79)
The date search does not work correctly.	• The tape has a blank portion in the recorded portion. (p. 57)
The picture which is recorded in the Digital8 system is not played back.	• PB MODE is set to **Hi8**/**8** in the menu settings. → Set it to AUTO. (p. 79)
The tape which is recorded in the Hi8 /standard 8 system is not played back correctly.	• Set PB MODE to **Hi8**/**8** in the menu settings. (p. 79)

In the recording and playback modes

Symptom	Cause and/or Corrective Actions
The power does not turn on.	• The battery pack is not installed, or is dead or nearly dead. → Install a charged battery pack. (p. 11, 12) • The AC power adaptor is not connected to a wall outlet. → Connect the AC power adaptor to a wall outlet. (p. 16)
The end search function does not work.	• The tape was ejected after recording. • You have not recorded on the new cassette yet.
The end search function does not work correctly.	• The tape has a blank portion in the beginning or middle.
The battery pack is quickly discharged.	• The operating temperature is too low. • The battery pack is not fully charged. → Charge the battery pack fully again. (p. 12) • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 11)
The battery remaining indicator does not indicate the correct time.	• You have used the battery pack in an extremely hot or cold environment for a long time. • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 11) • The battery is dead. → Use a fully charged battery pack. (p. 11, 12) • A deviation has occurred in the remaining battery time. → Charge the battery fully. (p. 12)
The power goes off although the battery remaining indicator indicates that the battery pack has enough power to operate.	• A deviation has occurred in the remaining battery time. → Charge the battery fully so that the battery remaining indicator indicates correct time. (p. 12)
The cassette cannot be removed from the holder.	• The power source is disconnected. → Connect it firmly. (p. 11, 16) • The battery is dead. → Use a charged battery pack. (p. 11, 12)
The ▣ and ⏏ indicators flash and no functions except for cassette ejection work.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 139)

(Continued on the following page)

When operating using the "Memory Stick" – DCR-TRV330/TRV530 only

Symptom	Cause and/or Corrective Actions
The "Memory Stick" does not function.	• The POWER switch is not set to MEMORY. → Set it to MEMORY. (p. 93) • The "Memory Stick" is not inserted. → Insert a "Memory Stick". (p. 90)
Recording does not function.	• The "Memory Stick" has already been recorded to its full capacity. → Delete unnecessary images and record again. (p. 93, 120) • The "Memory Stick" formatted incorrectly is inserted. → Format the "Memory Stick" on your camcorder or use another "Memory Stick." (p. 84) • The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock. (p. 88)
The image cannot be deleted.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock. (p. 88) • The image is protected. → Cancel image protection. (p. 119)
You cannot format the "Memory Stick".	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock. (p. 88)
Deleting all the images cannot be carried out.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock. (p. 88)
You cannot protect the image.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock. (p. 88) • The image to protect is not played back. → Press MEMORY PLAY to play back the image. (p. 107)
You cannot write a print mark on the still image.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock. (p. 88) • The image to write a print mark is not played back. → Press MEMORY PLAY to play back the image. (p. 107) • The "Memory Stick" has been recorded to its full capacity. → Delete unnecessary images and write a print mark again. (p. 120, 123)
The photo save function does not work.	• The write-protect tab on the "Memory Stick" is set to LOCK. → Release the lock. (p. 88)

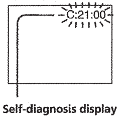
Others

Symptom	Cause and/or Corrective Actions
Digital program editing does not function.	• The input selector on the VCR is not set correctly. → Check the connection and set the input selector on the VCR again. (p. 63) • The camcorder is connected to DV equipment of other than Sony. → Set it to IR. (p. 64) • Setting program on a blank portion of the tape is attempted. → Set the program again on a recorded portion. (p. 71) • The camcorder and the VCR are not synchronized. → Adjust the synchronicity. (p. 69)
The Remote Commander supplied with your camcorder does not work.	• COMMANDER is set to OFF in the menu settings. → Set it to ON. (p. 79) • Something is blocking the infrared rays. → Remove the obstacle. • The batteries are inserted in the battery holder with the + – polarities incorrectly matching the + – marks. → Insert the batteries with the correct polarity. (p. 152) • The batteries are dead. → Insert new ones. (p. 152)
The picture from a TV or VCR does not appear even when your camcorder is connected to outputs on the TV or VCR.	• DISPLAY is set to V-OUT/LCD in the menu settings. → Set it to LCD. (p. 79)
The melody or beep sounds for 5 seconds.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 139) • Some troubles has occurred in your camcorder. → Remove the cassette and insert it again, then operate your camcorder.
You cannot charge the battery pack.	• The POWER switch is not set to OFF (CHG). → Set it to OFF (CHG).
While charging the battery pack, the backlight of the display window does not light.	• Charging the battery pack is completed. • The AC power adaptor is disconnected. → Connect it firmly. (p. 16) • Something is wrong with the battery pack. → Contact your Sony dealer or local authorized Sony service facility.
While charging the battery pack, the remaining battery time indicator flashes.	• The battery pack is not properly installed. → Install it properly. • Something is wrong with the battery pack. → Contact your Sony dealer or local authorized Sony service facility.
No function works though the power is on.	• Disconnect the power cord of the AC power adaptor or remove the battery, then reconnect it in about one minute. Turn the power on. If the functions still do not work, open the LCD panel and press the RESET button under DISPLAY button using a sharp-pointed object. (If you press the RESET button, all the settings including the date and time return to the default.) (p. 148)

Self-diagnosis display

Your camcorder has a self-diagnosis display function.
This function displays the current condition of your camcorder as a 5-digit code (a combination of a letter and figures) on the screen or in the display window.
If a 5-digit code is displayed, check the following code chart. The last two digits (indicated by □□) will differ depending on the state of your camcorder.

LCD screen, viewfinder or display window



Self-diagnosis display

- C:□□:□□
  You can service your camcorder yourself.
- E:□□:□□
  Contact your Sony dealer or local authorized Sony facility.

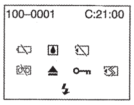
Five-digit display	Cause and/or Corrective Actions
C:04:□□	• You are using a battery pack that is not an "InfoLITHIUM" battery pack. ➔ Use an "InfoLITHIUM" battery pack. (p. 135)
C:21:□□	• Moisture condensation has occurred. ➔ Remove the cassette and leave your camcorder for at least 1 hour to acclimatize. (p. 139)
C:22:□□	• The video heads are dirty. ➔ Clean the heads using the Sony V8-25CLD cleaning cassette (optional). (p. 140)
C:31:□□ C:32:□□	• A malfunction other than the above that you can service has occurred. ➔ Remove the cassette and insert it again, then operate your camcorder. ➔ Disconnect the power cord of the AC power adaptor or remove the battery pack. After reconnecting the power source, operate your camcorder.
E:61:□□ E:62:□□	• A malfunction that you cannot service has occurred. ➔ Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit code. (example: E:61:10)

If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

Warning indicators and messages

If indicators and messages appear on the screen or in the display window, check the following.
See the page in parentheses "( )" for more information.

Warning indicators



100-0001 Warning indicator as to file
Slow flashing:
- The file is corrupted.
- The file is unreadable.

C:21:00 Self-diagnosis display (p. 130).

🔋 The battery is dead or nearly dead
Slow flashing:
- The battery is nearly dead.
  The 🔋 indicator sometimes blinks even if the remaining battery time is about five to ten minutes depending on the operating conditions, environment and battery condition.

Fast flashing:
- The battery is dead.

💧 Moisture condensation has occurred*
Fast flashing:
- Eject the cassette, turn off your camcorder, and leave it for about 1 hour with the cassette compartment open (p. 139).

▭ Warning indicator as to "Memory Stick"* (DCR-TRV330/TRV530 only)
Slow flashing:
- No "Memory Stick" is inserted.

Fast flashing:
- The "Memory Stick" is not readable with your camcorder (p. 88).

▭ Warning indicator as to "Memory Stick" formatting (DCR-TRV330/TRV530 only)
Fast flashing:
- "Memory Stick" is not formatted correctly (p. 84).
- The "Memory Stick" data is corrupted.*

📼 Warning indicator as to tape
Slow flashing:
- The tape is near the end.
- No tape is inserted.*
- The write-protect tab on the cassette is out (red) (p. 18).*

Fast flashing:
- The tape has run out.*

⏏ You need to eject the cassette*
Slow flashing:
- The write-protect tab on the cassette is out (red) (p. 18).

Fast flashing:
- Moisture condensation has occurred (p. 139).
- The tape has run out.
- The self-diagnosis display function is activated (p. 130).

🔑 The still image is protected * (DCR-TRV330/TRV530 only)
Slow flashing:
- The still image is protected (p. 119).

ϟ Warning indicator as to the flash (optional)
Fast flashing:
- There is something wrong with the external flash (optional).

* You hear the melody or beep sound.

Warning indicators and messages

Warning messages

• CLOCK SET	Set the date and time. (p. 17)
• FOR "InfoLITHIUM" BATTERY ONLY	Use an "InfoLITHIUM" battery pack. (p. 135)
• 8mm TAPE → SP REC Hi8 TAPE → LP/SP REC	Use Hi8 **Hi8**/Digital8 **D** tapes when you record in the LP mode.* (p. 85)
• 📼 ⏏ TAPE END	The tape has run out.*
• 📼 NO TAPE	Insert a cassette tape.*
• 📼 CLEANING CASSETTE**	The video heads are dirty. (p. 140)
• COPY INHIBIT	You tried to record a picture that has a copyright control signal.* (p. 133)
• ▭ FULL	The "Memory Stick" is full.* (p. 95) (DCR-TRV330/TRV530 only)
• ▭ 🔑	The write-protect tab on the "Memory Stick" is set to LOCK.* (p. 88) (DCR-TRV330/TRV530 only)
• ▭ NO FILE	No still image is recorded on the "Memory Stick".* (p. 108) (DCR-TRV330/TRV530 only)
• ▭ NO MEMORY STICK	No "Memory Stick" is inserted.* (DCR-TRV330/TRV530 only)
• ▭ MEMORY STICK ERROR	The "Memory Stick" data is corrupted.* (p. 90) (DCR-TRV330/TRV530 only)
• ▭ FORMAT ERROR	Check the type of formatting.* (p. 84) (DCR-TRV330/TRV530 only)
• ▭ 🔑 DIRECTORY ERROR	The "Memory Stick" has more than one directory such as 100msdcf.* (p. 107) (DCR-TRV330/TRV530 only)

* You hear the melody or beep sound.
** The ⊗ indicator and "📼 CLEANING CASSETTE" message appear one after another on the screen.

— Additional Information —

Digital8 D system, recording and playback

What is the "Digital8 D system"?

This video system has been developed to enable digital recording to Hi8 **Hi8**/Digital8 **D** video cassette .

Usable cassette tapes

We recommend using Hi8 **Hi8**/Digital8 **D** video cassette. *
The recording time when you use your Digital8 **D** system camcorder on Hi8 **Hi8**/standard 8 **8** tape is half the recording time when using the conventional Hi8 **Hi8**/standard 8 **8** system camcorder. (120 minutes of recording time becomes 60 minutes in the SP mode.)

* If you use standard 8 **8** tape, be sure to play back the tape on this camcorder. Mosaic pattern noise may appear when you play back standard 8 **8** tape on other VCRs (including other DCR-TRV230/TRV330/TRV530).

Note
Tapes recorded in the Digital8 **D** system cannot be played back on Hi8 **Hi8**/standard 8 **8** (analog) system machine.

8 is a trademark.
Hi8 is a trademark.
D is a trademark.

Playback system

The Digital8 **D** system or Hi8 **Hi8**/standard 8 **8** system is automatically detected before the tape is played back.
During playback of tapes recorded in the Hi8 **Hi8**/standard 8 **8** system, digital signals are output as the image signals from the DV IN/OUT jack.

Display during automatic detection of system
The Digital8 **D** system or Hi8 **Hi8**/standard 8 **8** system is automatically detected, and the playback system is automatically switched to. During switching of systems, the screen turns blue, and the following displays appear on the screen. A hissing noise also sometimes can be heard.

D → **Hi8**/**8**: During switching from Digital8 **D** to Hi8 **Hi8**/standard 8 **8**
Hi8/**8** → **D**: During switching from Hi8 **Hi8**/standard 8 **8** to Digital8 **D**

Copyright signal

When you play back

Using any other video camera recorder, you cannnot record on a tape that has recorded copyright control signals for copyright protection of software which is played back on your camcorder.

When you record

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software.
COPY INHIBIT appears on the LCD screen, in the viewfinder or on the TV screen if you try to record such software. Your camcorder does not record copyright control signals on the tape when it records.

When you playback a dual sound track tape

When you use tapes recorded in the Digital8 Ð system

When you play back a Digital8 Ð system tape which is dubbed from a dual sound track tape recorded in the DV system, set HiFi SOUND to the desired mode in the menu settings (p. 79).

Sound from speaker

HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Lch	Main sound
2	Rch	Sub sound

When you use a tape recorded in the Hi8/standard 8 system

When you play back a dual sound track tape recorded in an AFM HiFi stereo system, set HiFi SOUND to the desired mode in the menu settings (p. 79).

Sound from speaker

HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Monaural	Main sound
2	Unnatural Sound	Sub sound

You cannot record dual sound programs on your camcorder.

About the "InfoLITHIUM" battery pack

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camcorder and an AC power adaptor.
The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camcorder, and displays the remaining battery time in minutes.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camcorder.
- We recommend charging the battery pack in an ambient temperature of between 10 °C to 30°C (50 °F to 86 °F) until the backlight of the display window goes out, indicating that the battery pack is fully charged. If you charge the battery outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, either disconnect the cable from the DC IN jack on your camcorder or remove the battery pack.

Effective use of the battery pack

- Battery pack performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to use the battery pack longer:
  - Put the battery pack in a pocket to warm it up, and insert it in your camcorder immediately before you start taking shots.
  - Use the large capacity battery pack (NP-FM70/FM90/FM91, optional).
- Frequently using the LCD panel or frequently operating playback, fast forward or rewind wears out the battery pack faster. We recommend using the large capacity battery pack (NP-FM70/FM90/FM91, optional).
- Be certain to turn the POWER switch to OFF (CHG) while taking shots or playing back on your camcorder. The battery pack is also consumed when your camcorder is in the standby mode or playback is paused.
- Have spare battery packs handy for two or three times the expected recording time, and make a trial recordings before taking the actual recording.
- Do not expose the battery pack to water. The battery pack is not water resistant.

Remaining battery time indicator

- If the power may go off although the remaining battery time indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the remaining battery time indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate shooting time.
- The 🪫 mark indicating there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is about five to ten minutes.

How to store the battery pack

- Even if the battery pack is not used for a long time, store it in a dry, cool place after fully charging it once per year and then using the battery pack up on your camcorder. This is to maintain the battery pack's functions.
- To use the battery pack up on your camcorder, leave your camcorder in the shooting mode until the power goes off without a cassette inserted.

Battery life

- The battery life is limited. Battery capacity drops little by little as you use it more and more, and as time passes. When the available battery time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Please buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

About i.LINK

The DV jack on this unit is an i.LINK-compliant DV input/output jack. This section describes the i.LINK standard and its features.

What is "i.LINK"?

i.LINK is a digital serial interface for handling digital video, digital audio and other data in two directions between equipment having the i.LINK jack, and for controlling other equipment.
i.LINK-compatible equipment can be connected by a single i.LINK cable. Possible applications are operations and data transactions with various digital AV equipment.
When two or more i.LINK-compatible equipment are connected to this unit in a daisy chain, operations and data transactions are possible with not only the equipment that this unit is connected to but also with other devices via the directly connected equipment.
Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the equipment to be connected, and that operations and data transactions are sometimes not possible on some connected equipment.

Note

Normally, only one piece of equipment can be connected to this unit by the i.LINK cable (DV cable). When connecting this unit to i.LINK-compatible equipment having two or more i.LINK jacks (DV jacks), refer to the instruction manual of the equipment to be connected.

About the Name "i.LINK"

i.LINK is a more familiar term for IEEE 1394 data transport bus proposed by SONY, and is a trademark approved by many corporations.
IEEE 1394 is an international standard standardized by the Institute of Electrical and Electronic Engineers.

i.LINK Baud rate

i.LINK's maximum baud rate varies according to the equipment. Three maximum baud rates are defined:

S100 (approx. 100Mbps*)
S200 (approx. 200Mbps)
S400 (approx. 400Mbps)

The baud rate is listed under "Specifications" in the instruction manual of each equipment. It is also indicated near the i.LINK jack on some equipment.
The maximum baud rate of equipment on which it is not indicated such as this unit is "S100".
When units are unit is connected to equipment having a different maximum baud rate, the baud rate sometimes differs from the indicated baud rate.

* What is "Mbps"?
Mbps stands for megabits per second, or the amount of data that can be sent or received in one second. For example, a baud rate of 100Mbps means that 100 megabits of data can be sent in one second.

i.LINK Functions on this unit

For details on how to dub when this unit is connected to other video equipment having DV jacks, see page 61 .
This unit can also be connected to other i.LINK (DV) compatible equipment made by SONY (e.g. VAIO series personal computer) other than video equipment .
Before connecting this unit to a personal computer, make sure that application software supported by this unit is already installed on the personal computer.
For details on precautions when connecting this unit, also refer to the instruction manuals for the equipment to be connected.

Required i.LINK Cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

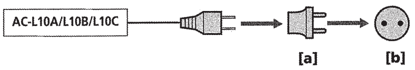
i.LINK and ℹ are trademarks.

Using your camcorder abroad

Using your camcorder abroad

You can use your camcorder in any country or area with the AC power adaptor supplied with your camcorder within 100 V to 240 V AC, 50/60 Hz.

When charging the battery pack, use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet **[b]**.



Your camcorder is an NTSC system based camcorder. If you want to view the playback picture on a TV, it must be an NTSC system based TV with VIDEO/AUDIO input jack. The following shows TV color systems used overseas.

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

SECAM system
Bulgaria, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Ukraine, etc.

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference. Select WORLD TIME in the menu settings. See page 79 for more information.

Maintenance information and precautions

Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, the beep sounds and the ▣ indicator flashes. When the ⏏ indicator flashes at the same time, the cassette is inserted in your camcorder. If moisture condenses on the lens, the indicator will not appear.

If moisture condensation occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about 1 hour with the cassette compartment open. Your camcorder can be used again if the ▣ indicator does not appear when the power is turned on again.

Note on moisture condensation
Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a hot place as follows:
- You bring your camcorder from a ski slope into a place warmed up by a heating device.
- You bring your camcorder from an air-conditioned car or room into a hot place outside.
- You use your camcorder after a squall or a shower.
- You use your camcorder in a high temperature and humidity place.

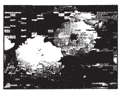
How to prevent moisture condensation
When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and tightly seal it. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about 1 hour).

Maintenance information

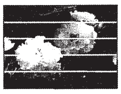
Cleaning the video head

To ensure normal recording and clear pictures, clean the video heads.

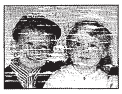
When you playback/record in the Digital8 Ð system
The video head may be dirty when:
- mosaic-pattern noise appears on the playback picture.
- playback pictures do not move.
- playback pictures are hardly visible.
- playback pictures do not appear.
- the ⊗ indicator and "🖭 CLEANING CASSETTE" message appear one after another.



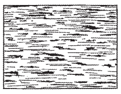
or



When you play back in the Hi8/Standard 8 (analog) system
The video head may be dirty when:
- playback pictures contain noise.
- playback pictures are hardly visible.
- playback pictures do not appear.



or



If the above problem occurs, clean the video heads with the Sony V8-25CLD cleaning cassette (optional). Check the picture and if the above problem persists, repeat cleaning.

Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using a LCD Cleaning Kit (optional) to clean the LCD screen.

Charging the manganese-lithium battery in your camcorder

Your camcorder is supplied with a manganese-lithium battery installed so as to retain the date and time, etc., regardless of the setting of the POWER switch. The manganese-lithium battery is always charged as long as you are using your camcorder. The battery, however, will get discharged gradually if you do not use your camcorder. It will be completely discharged in about half a year if you do not use your camcorder at all. Even if the manganese-lithium battery is not charged, it will not affect the camcorder operation. To retain the date and time, etc., charge the battery if the battery is discharged.

Charging the manganese-lithium battery:
- Connect your camcorder to a wall outlet using the AC power adaptor supplied with your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.
- Or install the fully charged battery pack in your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.

Precautions

Camcorder operation

- Operate your camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in this operating instructions.
- If any solid object or liquid get inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF (CHG) when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- Keep your camcorder away from strong magnetic fields or mechanical vibration. Noise may appear on the image.
- Do not touch the LCD screen with your fingers or a sharp-pointed object.
- If your camcorder is used in a cold place, a residual image may appear on the screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

On handling tapes

- Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape and if the recording tab is in or out.
- Do not open the tape protect cover or touch the tape.

Camcorder care

- Remove the tape, and periodically turn on the power, operate the CAMERA and VCR sections and play back a tape for about 3 minutes when your camcorder is not to be used for a long time.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into your camcorder. When you use your camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause your camcorder to malfunction, and sometimes this malfunction cannot be repaired.

Connection to your computer

- When recording with i.LINK cable the image processed or edited by your computer, use a new Hi8 Hi8/Digital8 D tape.
- When inputting the image recorded by Hi8/standard 8 (analog) system into your computer, dub the image into a Digital8 D or DV tape first, and then input it into your computer.

When inputting the image recorded by Hi8/standard 8 system into Sony VAIO
The Program Capture function of DVgate motion doesn't work. To use this function, dub the image into a Digital8 D or DV tape first, and then input it into your Sony VAIO.

AC power adaptor

- Unplug the unit from the wall outlet when you are not using the unit for a long time. To disconnect the power cord, pull it out by the plug. Never pull the power cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the power cord forcibly, or place a heavy object on it. This will damage the cord and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

About care and storage of the lens

- Wipe the surface of the lens clean with a soft cloth in the following instances:
  - When there are fingerprints on the lens surface
  - In hot or humid locations
  - When the lens is used in environments susceptible to salt such as the seaside
- Store the lens in a well-ventilated location subject to little dirt or dust.

To prevent mold from occurring, periodically perform the above.
We recommend turning on and operating the video camera recorder about once per month to keep the video camera recorder in an optimum state for a long time.

Battery pack

- Use only the specified charger or video equipment with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the video equipment securely.
- Charging while some capacity remains does not affect the original battery capacity.

Note on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following:
- Be sure to insert the batteries with the + – polarities matched to the + – marks.
- Dry batteries are not rechargeable.
- Do not use a combination of new and old batteries.
- Do not use different types of batteries.
- Current flows from batteries when you are not using them for a long time.
- Do not use leaking batteries.

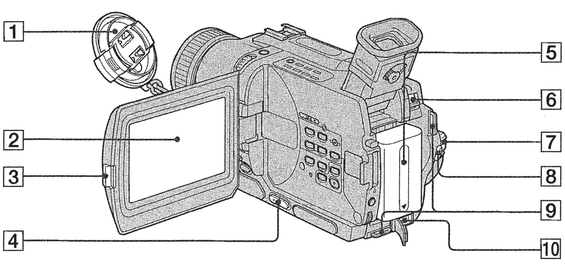
If batteries are leaking
- Wipe off the liquid in the battery compartment carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any problem occurs, unplug your camcorder and contact your nearest Sony dealer.

— Quick Reference —

Identifying the parts and controls

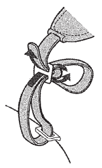
Camcorder

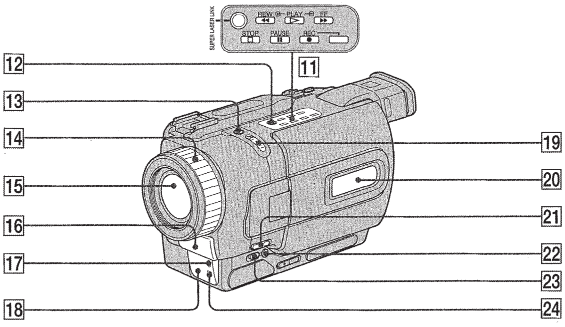


1 **Lens cap** (p. 19)	6 **BATT (battery) release lever** (p. 11)
2 **LCD screen** (p. 19)	7 **POWER switch** (p. 19)
3 **OPEN button** (p. 19)	8 **START/STOP button** (p. 19)
4 **VOLUME buttons** (p. 27)	9 **Hooks for shoulder strap**
5 **Battery pack** (p. 11)	10 **DC IN jack** (p. 12)

This mark indicates that this product is a genuine accessory for Sony video products.
When purchasing Sony video products, Sony recommends that you purchase accessories with this "GENUINE VIDEO ACCESSORIES" mark.

Attaching the shoulder strap
Attach the shoulder strap supplied with your camcorder to the hooks for the shoulder strap.

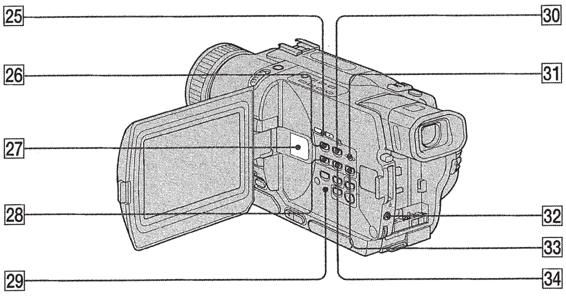




11 **Video control buttons** (p. 27, 29)
- ■ STOP (stop)
- ◀◀ REW (rewind)
- ▶ PLAY (playback)
- ▶▶ FF (fastforward)
- II PAUSE (pause)
- ● REC (recording)

12 **SUPER LASER LINK button** (p. 32)
13 **SUPER NIGHTSHOT button** (p. 23)
14 **Focus ring** (p. 47)
15 **Lens**
16 **Microphone**
17 **Camera recording lamp** (p. 19)
18 **Infrared rays emitter** (p. 23, 32)
19 **NIGHTSHOT switch** (p. 23)
20 **Display window** (p. 153)
21 **FOCUS switch** (p. 47)
22 **BACK LIGHT button** (p. 23)
23 **FADER button** (p. 37)
24 **Remote sensor**

What is SUPER LASER LINK?
The super laser link system sends and receives pictures and sound between video equipment having the super laser link mark by using infrared rays.



25 **EDITSEARCH buttons** (p. 26)

26 **MEMORY PLAY button** (p. 107)
(DCR-TRV330/TRV530 only)

27 **Speaker**

28 **MEMORY – button** (p. 99, 107)
(DCR-TRV330/TRV530 only)

29 **RESET button** (p. 129)

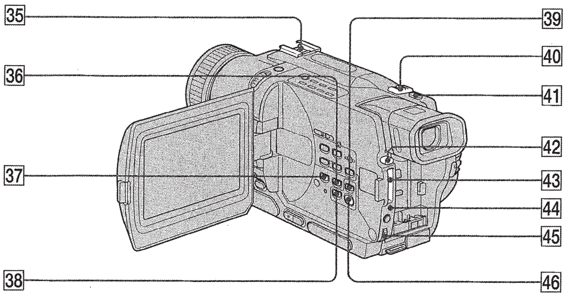
30 **MEMORY INDEX button** (p. 108)
(DCR-TRV330/TRV530 only)

31 **MEMORY DELETE button** (p. 120)
(DCR-TRV330/TRV530 only)

32 **EXPOSURE button** (p. 46)

33 **MEMORY MIX button** (p. 99)
(DCR-TRV330/TRV530 only)

34 **MEMORY + button** (p. 99, 107)
(DCR-TRV330/TRV530 only)



35 **Intelligent accessory shoe**

36 **END SEARCH button** (p. 26)

37 **DISPLAY button** (p. 28)

38 **TITLE button** (p. 48)

39 **PB ZOOM button** (p. 55, 116)

40 **Power zoom lever** (p. 21)

41 **PHOTO button** (p. 33, 93)

42 **"Memory Stick" eject button** (p. 90)
(DCR-TRV330/TRV530 only)

43 **"Memory Stick" slot** (p. 90)
(DCR-TRV330/TRV530 only)

44 **Access lamp** (p. 90)
(DCR-TRV330/TRV530 only)

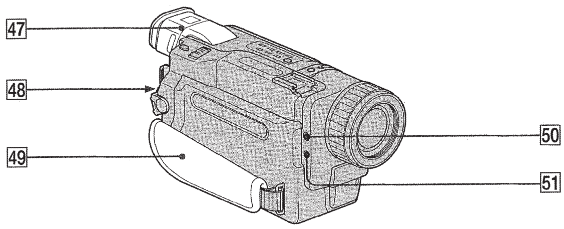
45 **SEL/PUSH EXEC dial** (p. 79)

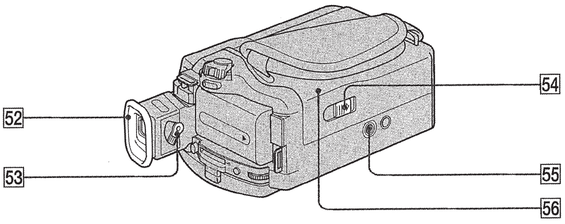
46 **MENU button** (p. 79)

Intelligent
Accessory Shoe

Notes on the intelligent accessory shoe

- The intelligent accessory shoe supplies power to optional accessories such as a video light, microphone or printer (DCR-TRV330/TRV530 only).
- The intelligent accessory shoe is linked to the POWER switch, allowing you to turn the power supplied by the shoe on and off. Refer to the operating instructions of the accessory for further information.
- The intelligent accessory shoe has a safety device for fixing the installed accessory securely. To connect an accessory, press down and push it to the end, and then tighten the screw.
- To remove an accessory, loosen the screw, and then press down and pull out the accessory.





47 **Viewfinder** (p. 22)

48 **LOCK knob** (p. 19)
(DCR-TRV330/TRV530 only)

49 **Grip strap**

50 **∩ (headphones) jack**

51 **MIC (PLUG IN POWER) jack**
Connect an external microphone (optional). This jack also accepts a "plug-in-power" microphone.

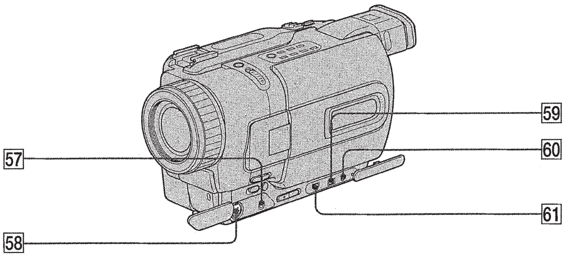
52 **Eyecup**

53 **Viewfinder lens adjustment lever**
(p. 22)

54 **OPEN/EJECT switch** (p. 18)

55 **Tripod receptacle** (base)
Make sure that the length of the tripod screw is less than 6.5 mm (9/32 inch). Otherwise, you cannot attach the tripod securely and the screw may damage your camcorder.

56 **Cassette compartment** (p. 18)



57 **AUDIO/VIDEO ID-2 jack**
(p. 31, 60, 104)

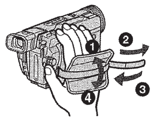
58 **S VIDEO ID-2 jack** (p. 31)

59 **DV IN/OUT jack** (p. 61, 104)
The DV IN/OUT jack is i.LINK compatible.

60 **LANC ⌖ jack**
LANC stands for Local Application Control Bus System. The LANC control jack is used for controlling the tape transport of video equipment and other peripherals connected to the video equipment. This jack has the same function as the jack indicated as CONTROL L or REMOTE.

61 **Ψ (USB) jack** (p. 111)
(DCR-TRV330/TRV530 only)

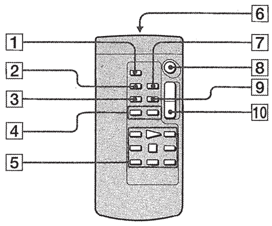
Fastening the grip strap



Fasten the grip strap firmly.

Remote Commander

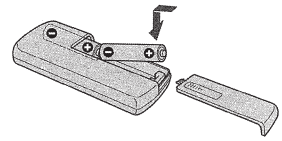
The buttons that have the same name on the Remote Commander as on your camcorder function identically to the buttons on your camcorder.



1 **PHOTO button** (p. 33, 93)
2 **DISPLAY button** (p. 28)
3 **SEARCH MODE button** (p. 57, 58)
4 **⏮/⏭ buttons** (p. 57, 58)
5 **Tape transport buttons** (p. 29)
6 **Transmitter**
Point toward the remote sensor to control the camcorder after turning on the camcorder.
7 **ZERO SET MEMORY button** (p. 52, 56)
8 **START/STOP button** (p. 19)
9 **DATA CODE button** (p. 28)
10 **Power zoom button** (p. 21)

To prepare the Remote Commander

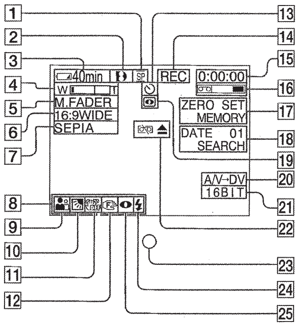
Insert 2 size AA (R6) batteries by matching the + and – polarities on the batteries to the + – marks inside the battery compartment.



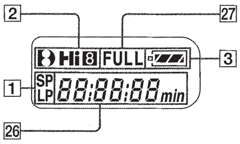
Notes on the Remote Commander
- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- Your camcorder works in the Commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR in the Commander mode VTR 2, we recommend changing the Commander mode or covering the sensor of the VCR with black paper.

Operation indicators

LCD screen and Viewfinder



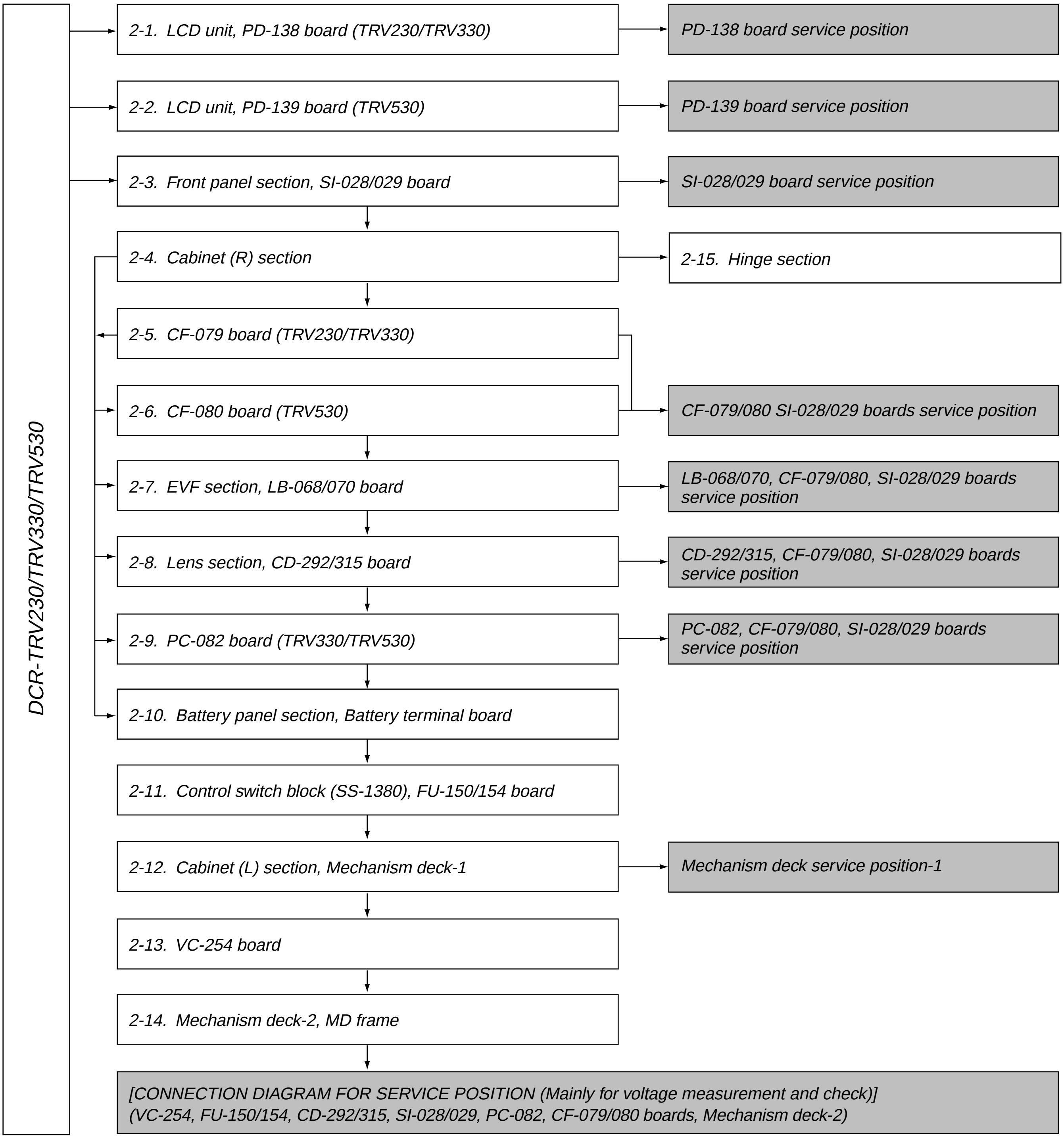
Display window



1 **Recording mode indicator** (p. 19) **/Mirror mode indicator** (p. 20)
2 **Format indicator** (p. 133)
Ð, Hi8 or 8 indicator appears.
3 **Remaining battery time indicator** (p. 12, 22, 28)
4 **Zoom indicator** (p. 21)**/Exposure indicator** (p. 46)
5 **Fader indicator** (p. 37)**/Digital effect indicator** (p. 41, 54)
6 **Wide mode indicator** (p. 36)**/ FRAME indicator** (p. 93) (DCR-TRV330/ TRV530 only)
7 **Picture effect indicator** (p. 40, 53)
8 **Volume indicator** (p. 27)**/Data code indicator** (p. 28)
9 **PROGRAM AE indicator** (p. 44)
10 **Backlight indicator** (p. 23)
11 **SteadyShot off indicator** (p. 81)
12 **Manual focusing indicator** (p. 47)
13 **Self-timer indicator** (p. 25, 34, 97) (DCR-TRV330/TRV530 only)
14 **STBY/REC indicator** (p. 19)**/Video control mode** (p. 29)
15 **Tape counter indicator** (p. 22)**/Time code indicator** (p. 22)**/Self-diagnosis display indicator** (p. 130)**/Tape photo recording indicator** (p. 33)
16 **Remaining tape indicator** (p. 22)
17 **ZERO SET MEMORY indicator** (p. 52, 56, 78)
18 **Search mode indicator** (p. 26, 57, 58)
19 **NIGHTSHOT indicator** (p. 23)
20 **A/V → DV indicator** (p. 74)**/ DV IN indicator** (p. 76)
21 **Audio mode indicator** (p. 85)
22 **Warning indicators** (p. 131)
23 **Recording lamp** (p. 19)
This indicator appears in the viewfinder.
24 **Video flash ready indicator** (p. 81)
This indicator appears when you use the video flash light (optional).
25 **Video flash mode indicator** (p. 81)
26 **Tape counter indicator** (p. 22)**/Time code indicator** (p. 22)**/Self-diagnosis display indicator** (p. 130)
27 **FULL charge indicator** (p. 12)

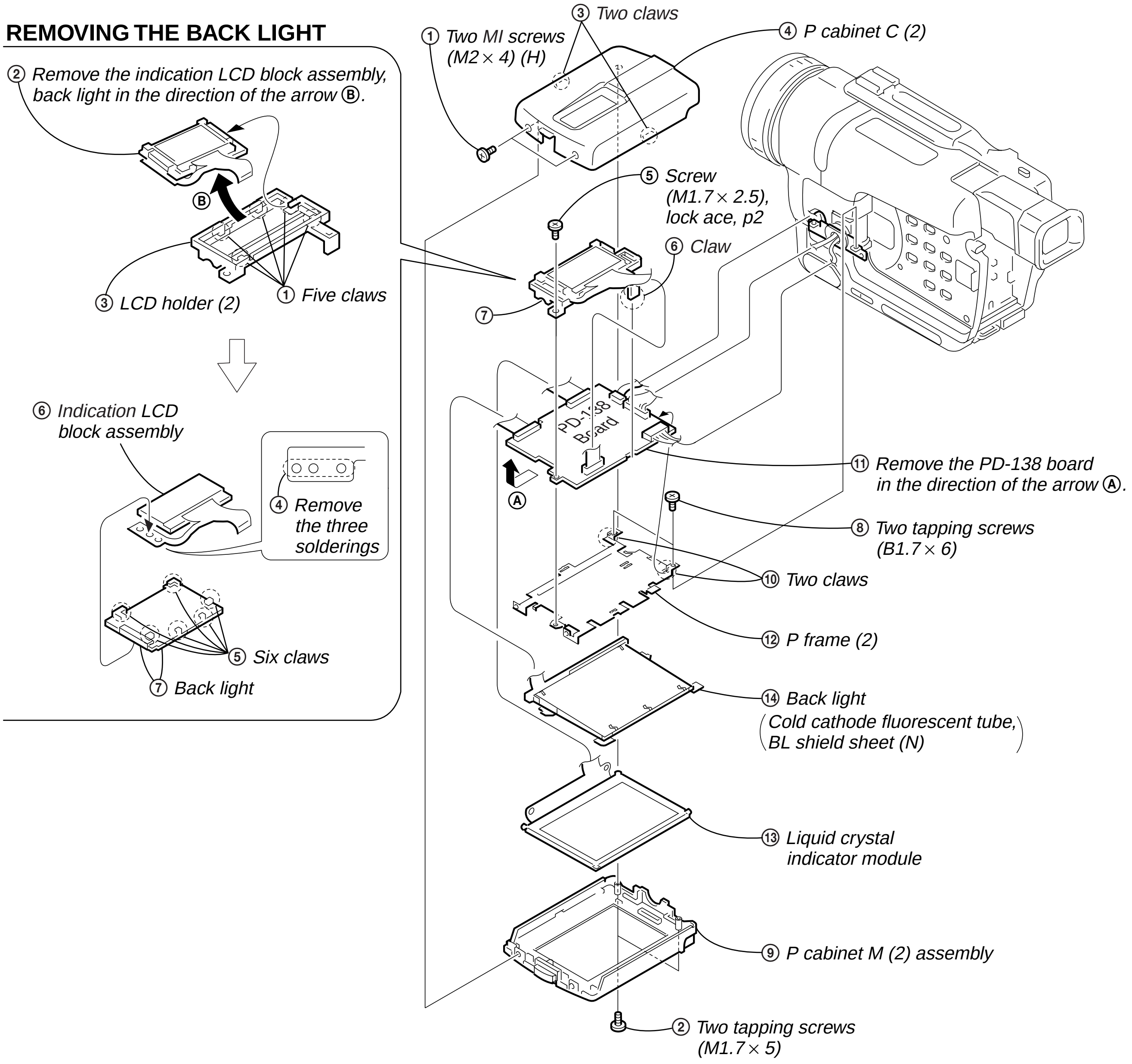
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

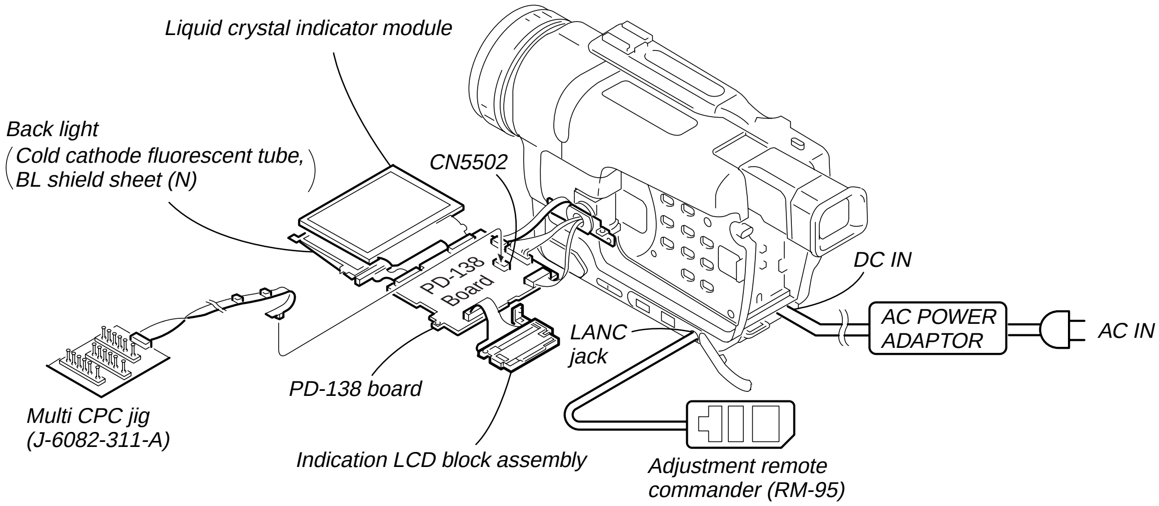

DCR-TRV230/TRV330/TRV530
2-1. LCD unit, PD-138 board (TRV230/TRV330)
PD-138 board service position
2-2. LCD unit, PD-139 board (TRV530)
PD-139 board service position
2-3. Front panel section, SI-028/029 board
SI-028/029 board service position
2-4. Cabinet (R) section
2-15. Hinge section
2-5. CF-079 board (TRV230/TRV330)
2-6. CF-080 board (TRV530)
CF-079/080 SI-028/029 boards service position
2-7. EVF section, LB-068/070 board
LB-068/070, CF-079/080, SI-028/029 boards service position
2-8. Lens section, CD-292/315 board
CD-292/315, CF-079/080, SI-028/029 boards service position
2-9. PC-082 board (TRV330/TRV530)
PC-082, CF-079/080, SI-028/029 boards service position
2-10. Battery panel section, Battery terminal board
2-11. Control switch block (SS-1380), FU-150/154 board
2-12. Cabinet (L) section, Mechanism deck-1
Mechanism deck service position-1
2-13. VC-254 board
2-14. Mechanism deck-2, MD frame
[CONNECTION DIAGRAM FOR SERVICE POSITION (Mainly for voltage measurement and check)]
(VC-254, FU-150/154, CD-292/315, SI-028/029, PC-082, CF-079/080 boards, Mechanism deck-2)

NOTE: Follow the disassembly procedure in the numerical order given.

2-1. LCD UNIT, PD-138 BOARD (TRV230/TRV330)

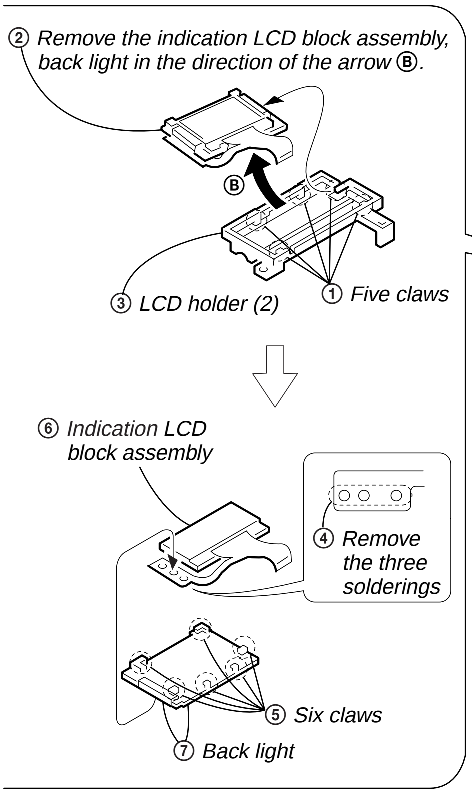

REMOVING THE BACK LIGHT
② Remove the indication LCD block assembly, back light in the direction of the arrow Ⓑ.
Ⓑ
③ LCD holder (2)
① Five claws
⑥ Indication LCD block assembly
④ Remove the three solderings
⑤ Six claws
⑦ Back light
③ Two claws
① Two MI screws (M2 × 4) (H)
④ P cabinet C (2)
⑤ Screw (M1.7 × 2.5), lock ace, p2
⑥ Claw
⑦
PD-138 Board
Ⓐ
⑪ Remove the PD-138 board in the direction of the arrow Ⓐ.
⑧ Two tapping screws (B1.7 × 6)
⑩ Two claws
⑫ P frame (2)
⑭ Back light (Cold cathode fluorescent tube, BL shield sheet (N))
⑬ Liquid crystal indicator module
⑨ P cabinet M (2) assembly
② Two tapping screws (M1.7 × 5)

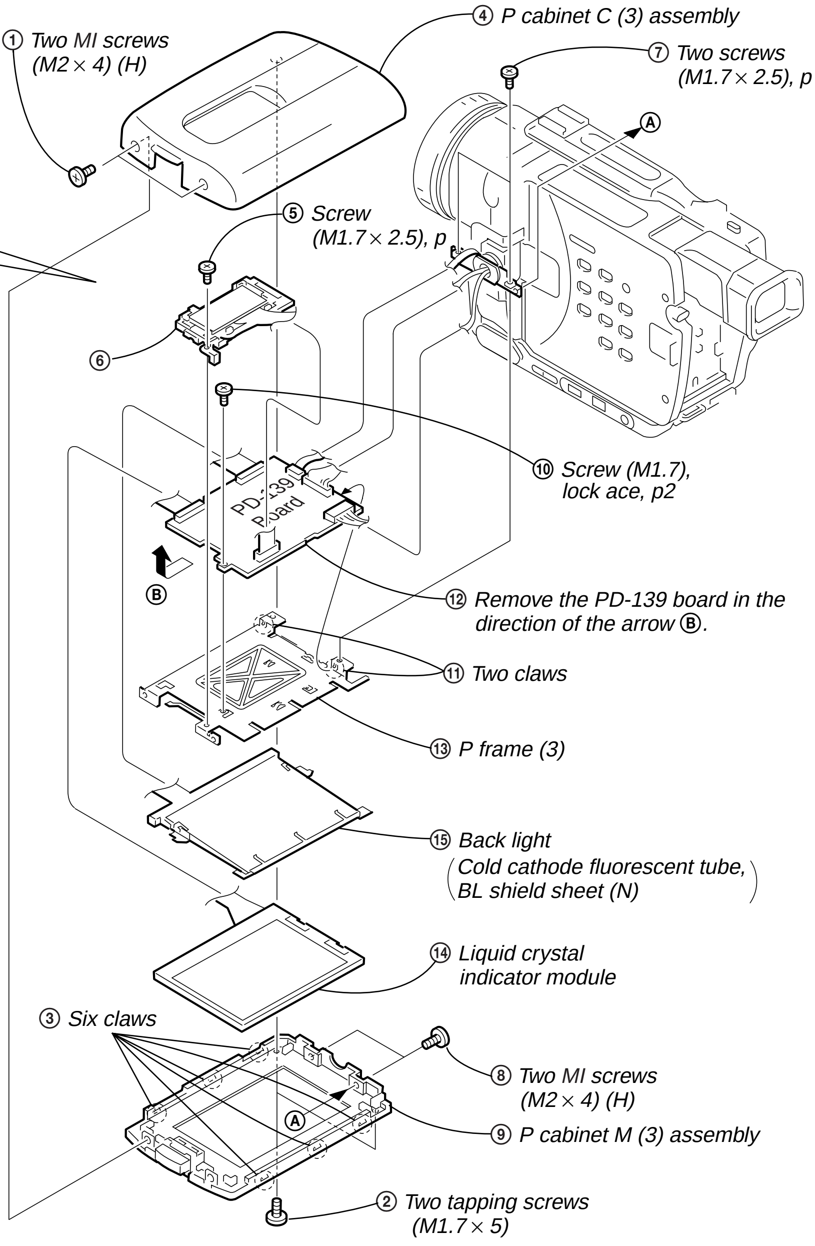
[PD-138 BOARD SERVICE POSITION]


Liquid crystal indicator module
Back light (Cold cathode fluorescent tube, BL shield sheet (N))
CN5502
PD-138 Board
DC IN
AC POWER ADAPTOR
AC IN
LANC jack
PD-138 board
Multi CPC jig (J-6082-311-A)
Indication LCD block assembly
Adjustment remote commander (RM-95)

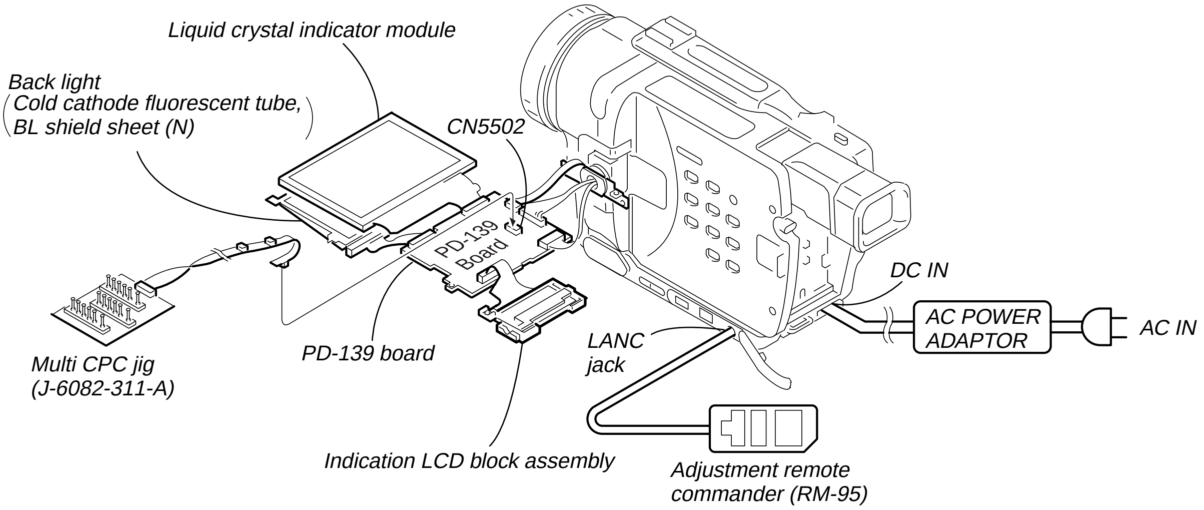
2-2. LCD UNIT, PD-139 BOARD (TRV530)

REMOVING THE BACK LIGHT

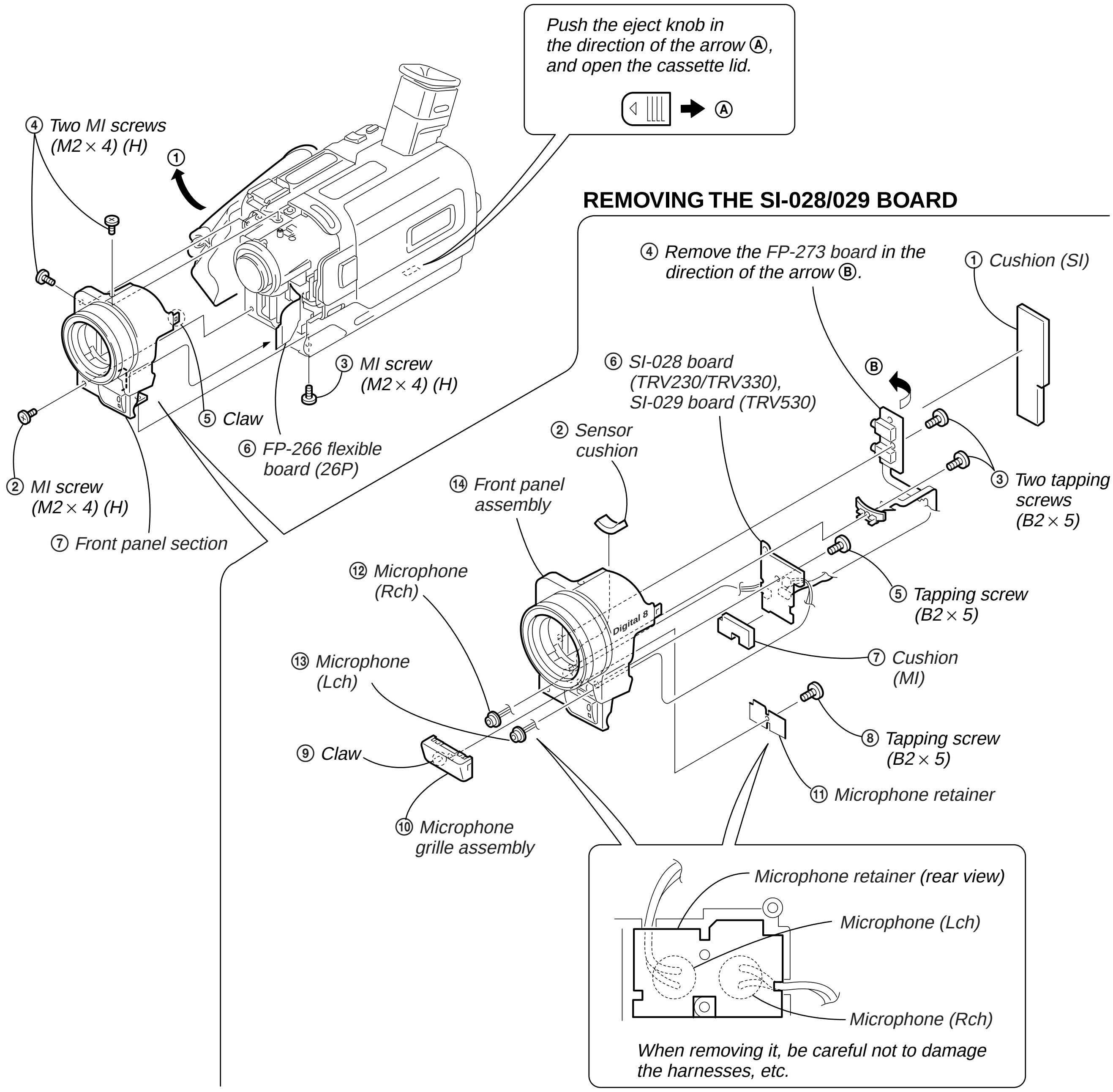

② Remove the indication LCD block assembly, back light in the direction of the arrow Ⓑ.
Ⓑ
③ LCD holder (2)
① Five claws
⑥ Indication LCD block assembly
④ Remove the three solderings
⑤ Six claws
⑦ Back light


① Two MI screws (M2 × 4) (H)
④ P cabinet C (3) assembly
⑦ Two screws (M1.7 × 2.5), p
Ⓐ
⑤ Screw (M1.7 × 2.5), p
⑥
⑩ Screw (M1.7), lock ace, p2
PD-139 Board
Ⓑ
⑫ Remove the PD-139 board in the direction of the arrow Ⓑ.
⑪ Two claws
⑬ P frame (3)
⑮ Back light (Cold cathode fluorescent tube, BL shield sheet (N))
⑭ Liquid crystal indicator module
③ Six claws
⑧ Two MI screws (M2 × 4) (H)
Ⓐ
⑨ P cabinet M (3) assembly
② Two tapping screws (M1.7 × 5)

[PD-139 BOARD SERVICE POSITION]


Liquid crystal indicator module
Back light (Cold cathode fluorescent tube, BL shield sheet (N))
CN5502
PD-139 Board
Multi CPC jig (J-6082-311-A)
PD-139 board
LANC jack
DC IN
AC POWER ADAPTOR
AC IN
Indication LCD block assembly
Adjustment remote commander (RM-95)

2-3. FRONT PANEL SECTION, SI-028/029 BOARD


Push the eject knob in the direction of the arrow Ⓐ, and open the cassette lid.

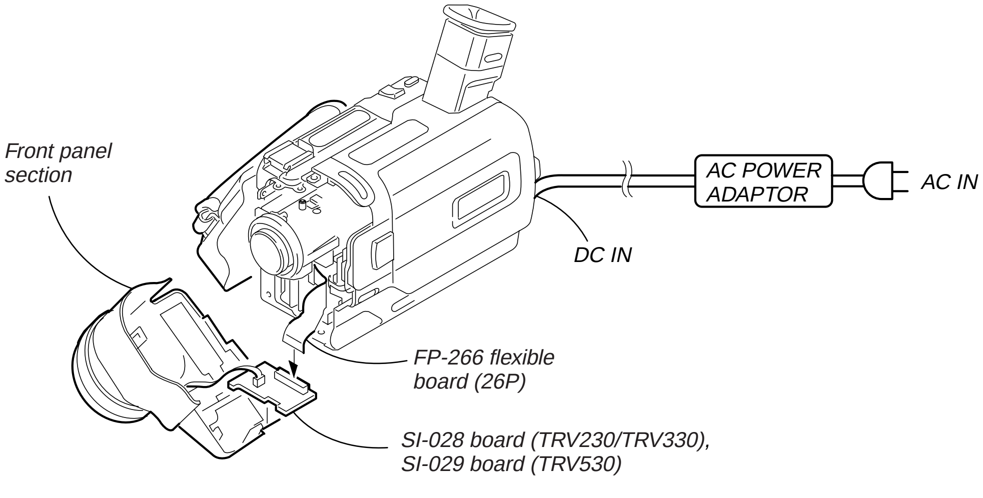
Ⓐ
①
② MI screw (M2 × 4) (H)
③ MI screw (M2 × 4) (H)
④ Two MI screws (M2 × 4) (H)
⑤ Claw
⑥ FP-266 flexible board (26P)
⑦ Front panel section

REMOVING THE SI-028/029 BOARD

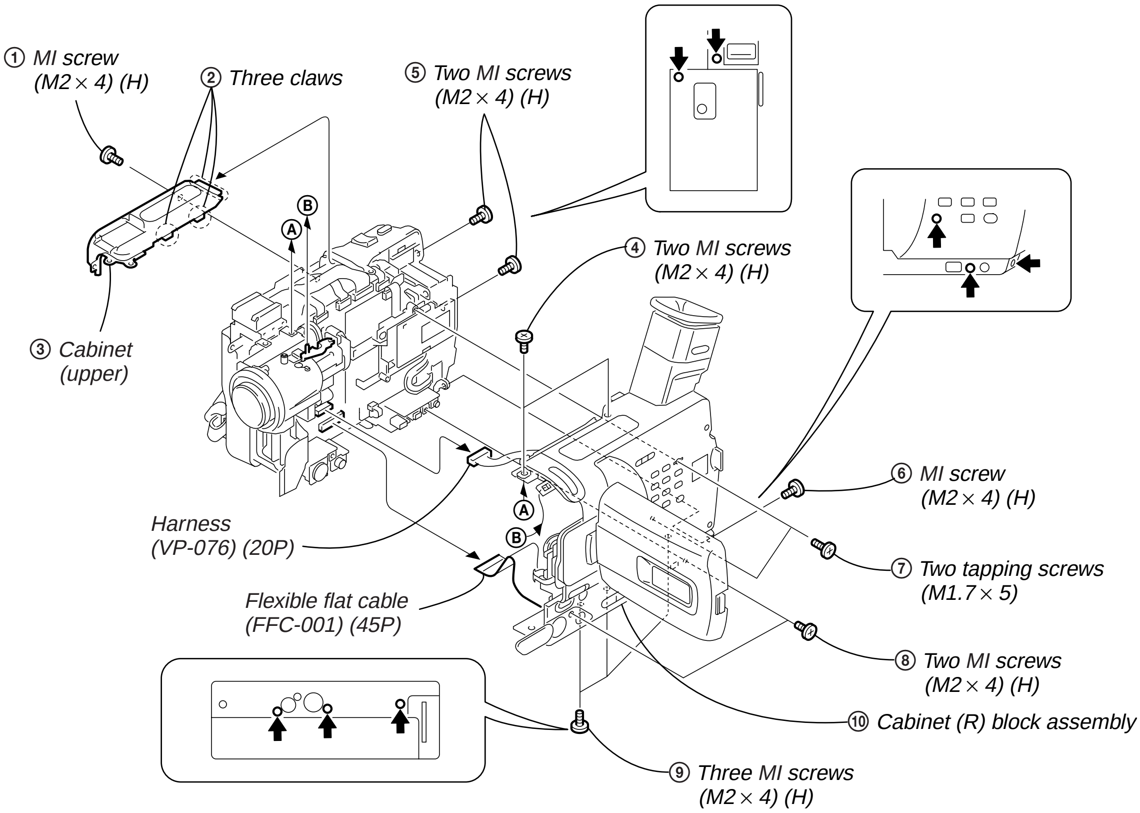
① Cushion (SI)
② Sensor cushion
③ Two tapping screws (B2 × 5)
④ Remove the FP-273 board in the direction of the arrow Ⓑ.
Ⓑ
⑤ Tapping screw (B2 × 5)
⑥ SI-028 board (TRV230/TRV330), SI-029 board (TRV530)
⑦ Cushion (MI)
⑧ Tapping screw (B2 × 5)
⑨ Claw
⑩ Microphone grille assembly
⑪ Microphone retainer
⑫ Microphone (Rch)
⑬ Microphone (Lch)
⑭ Front panel assembly
Digital 8
Microphone retainer (rear view)
Microphone (Lch)
Microphone (Rch)

When removing it, be careful not to damage the harnesses, etc.

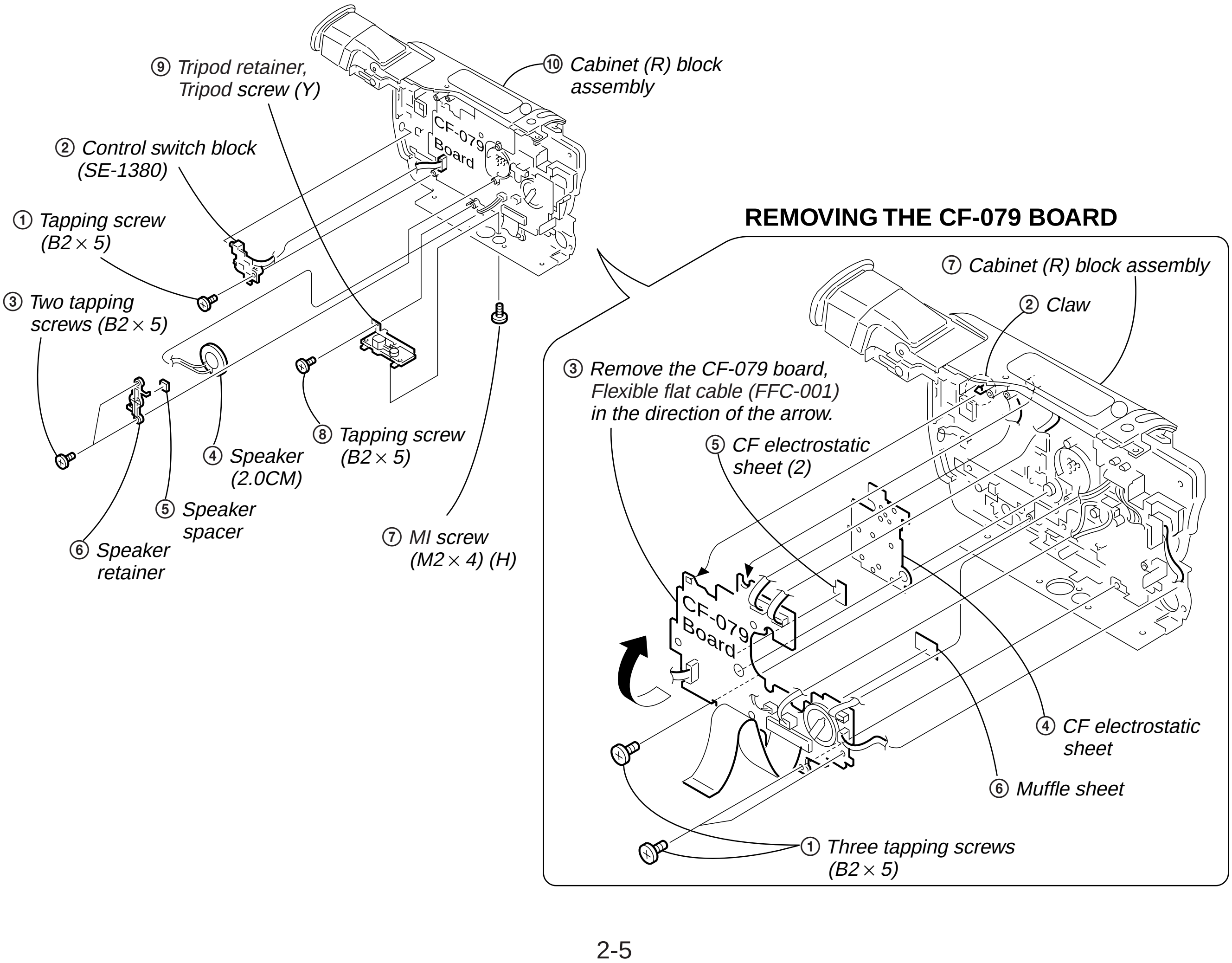
[SI-028/029 BOARD SERVICE POSITION]


Front panel section
AC POWER ADAPTOR
AC IN
DC IN
FP-266 flexible board (26P)
SI-028 board (TRV230/TRV330), SI-029 board (TRV530)

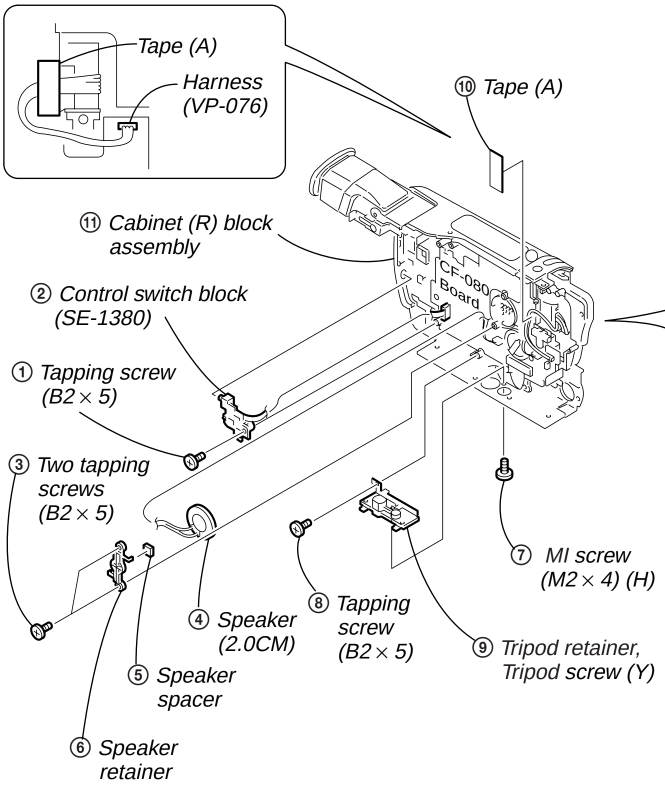
2-4. CABINET (R) SECTION


① MI screw (M2 × 4) (H)
② Three claws
⑤ Two MI screws (M2 × 4) (H)
A
B
④ Two MI screws (M2 × 4) (H)
③ Cabinet (upper)
⑥ MI screw (M2 × 4) (H)
Harness (VP-076) (20P)
A
B
⑦ Two tapping screws (M1.7 × 5)
Flexible flat cable (FFC-001) (45P)
⑧ Two MI screws (M2 × 4) (H)
⑩ Cabinet (R) block assembly
⑨ Three MI screws (M2 × 4) (H)

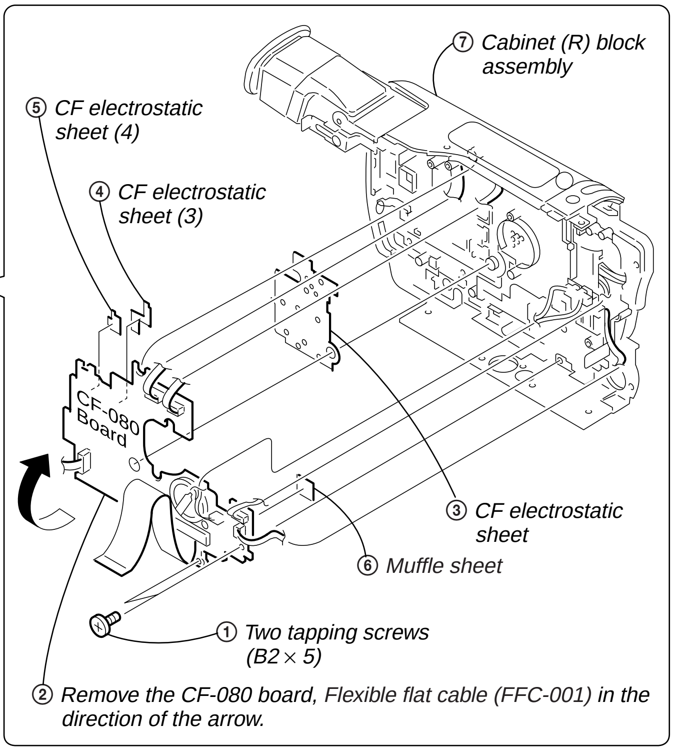
2-5. CF-079 BOARD (TRV230/TRV330)


⑨ Tripod retainer, Tripod screw (Y)
⑩ Cabinet (R) block assembly
CF-079 Board
② Control switch block (SE-1380)
① Tapping screw (B2 × 5)
REMOVING THE CF-079 BOARD
⑦ Cabinet (R) block assembly
② Claw
③ Two tapping screws (B2 × 5)
③ Remove the CF-079 board, Flexible flat cable (FFC-001) in the direction of the arrow.
⑤ CF electrostatic sheet (2)
⑧ Tapping screw (B2 × 5)
④ Speaker (2.0CM)
⑤ Speaker spacer
⑦ MI screw (M2 × 4) (H)
⑥ Speaker retainer
CF-079 Board
④ CF electrostatic sheet
⑥ Muffle sheet
① Three tapping screws (B2 × 5)

2-6. CF-080 BOARD (TRV530)

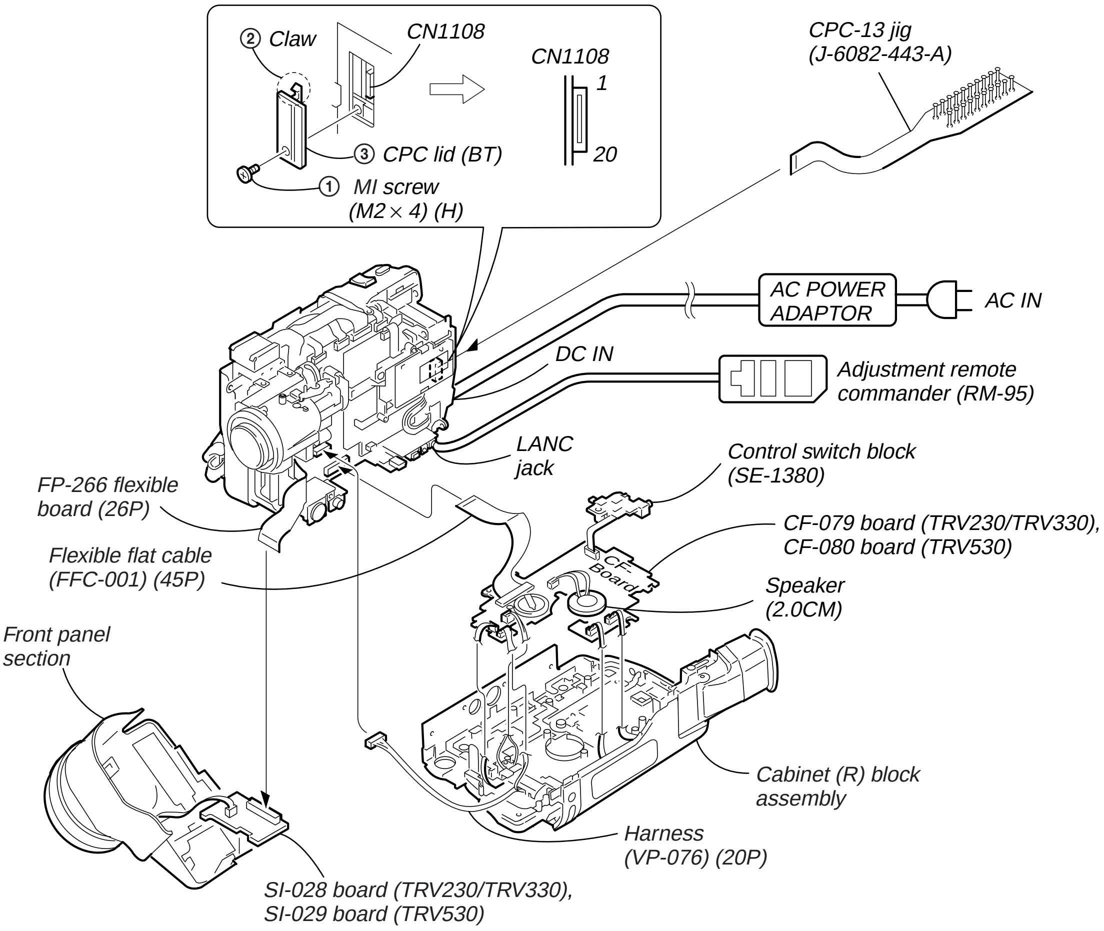

Tape (A)
Harness (VP-076)
⑩ Tape (A)
⑪ Cabinet (R) block assembly
② Control switch block (SE-1380)
① Tapping screw (B2 × 5)
③ Two tapping screws (B2 × 5)
CF-080 Board
⑦ MI screw (M2 × 4) (H)
④ Speaker (2.0CM)
⑧ Tapping screw (B2 × 5)
⑨ Tripod retainer, Tripod screw (Y)
⑤ Speaker spacer
⑥ Speaker retainer

REMOVING THE CF-080 BOARD


⑦ Cabinet (R) block assembly
⑤ CF electrostatic sheet (4)
④ CF electrostatic sheet (3)
CF-080 Board
③ CF electrostatic sheet
⑥ Muffle sheet
① Two tapping screws (B2 × 5)

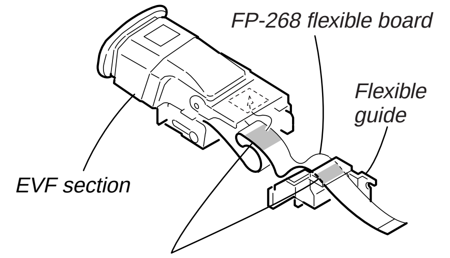
② Remove the CF-080 board, Flexible flat cable (FFC-001) in the direction of the arrow.

[CF-079/080, SI-028/029, BOARDS SERVICE POSITION]

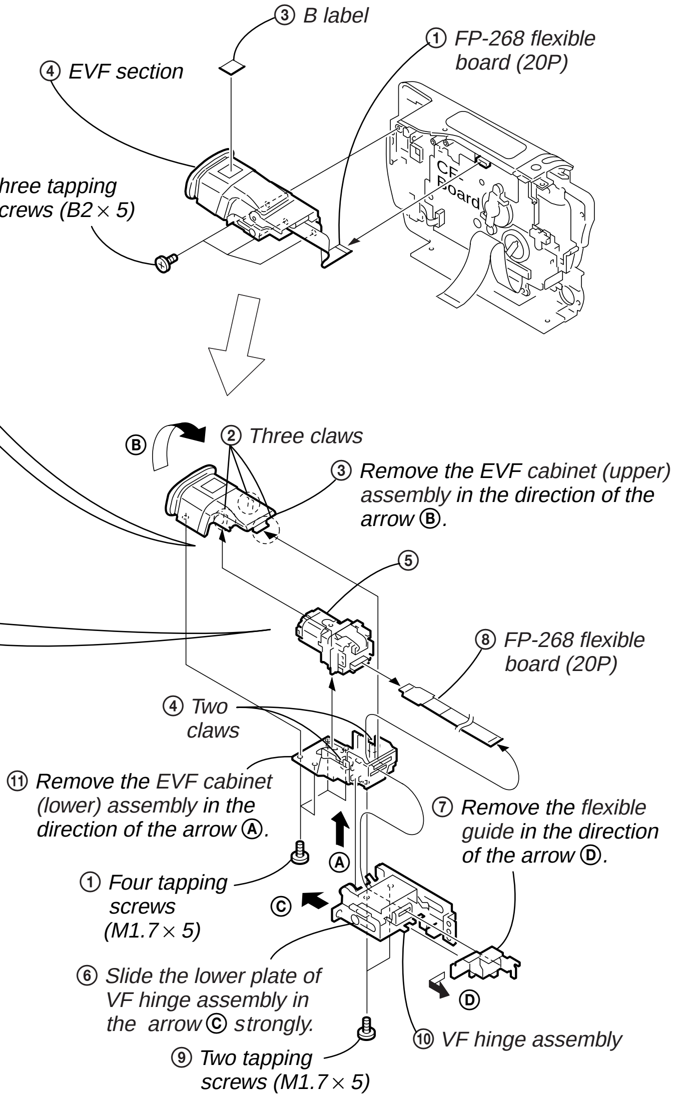

② Claw
CN1108
CN1108
1
20
③ CPC lid (BT)
① MI screw (M2 × 4) (H)
CPC-13 jig (J-6082-443-A)
AC POWER ADAPTOR
AC IN
DC IN
Adjustment remote commander (RM-95)
LANC jack
Control switch block (SE-1380)
FP-266 flexible board (26P)
CF-079 board (TRV230/TRV330), CF-080 board (TRV530)
Flexible flat cable (FFC-001) (45P)
CF-Board
Speaker (2.0CM)
Front panel section
Cabinet (R) block assembly
Harness (VP-076) (20P)
SI-028 board (TRV230/TRV330), SI-029 board (TRV530)

2-7. EVF SECTION, LB-068/070 BOARD

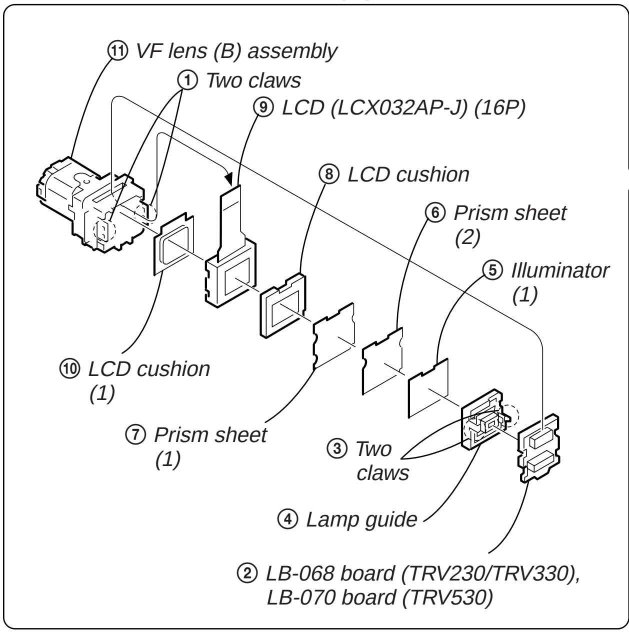
PRECAUTION WHEN ATTACHING FP-268 FLEXIBLE BOARD


FP-268 flexible board
Flexible guide
EVF section

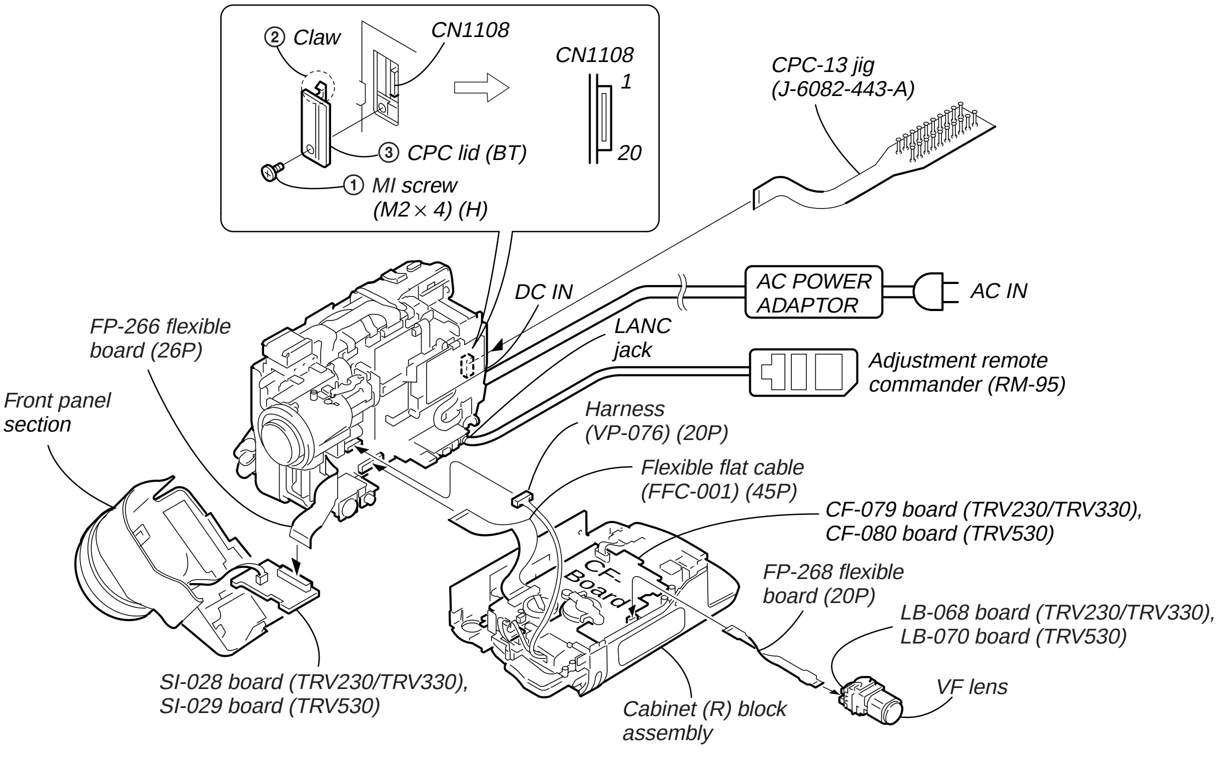
Fix the FP-268 flexible board to both the EVF section, and flexible guide with the both-sided adhesive tape.


③ B label
① FP-268 flexible board (20P)
④ EVF section
② Three tapping screws (B2 × 5)
CF Board
Ⓑ
② Three claws
③ Remove the EVF cabinet (upper) assembly in the direction of the arrow Ⓑ.
⑤
⑧ FP-268 flexible board (20P)
④ Two claws
⑪ Remove the EVF cabinet (lower) assembly in the direction of the arrow Ⓐ.
⑦ Remove the flexible guide in the direction of the arrow Ⓓ.
Ⓐ
① Four tapping screws (M1.7 × 5)
Ⓒ
⑥ Slide the lower plate of VF hinge assembly in the arrow Ⓒ strongly.
Ⓓ
⑩ VF hinge assembly
⑨ Two tapping screws (M1.7 × 5)

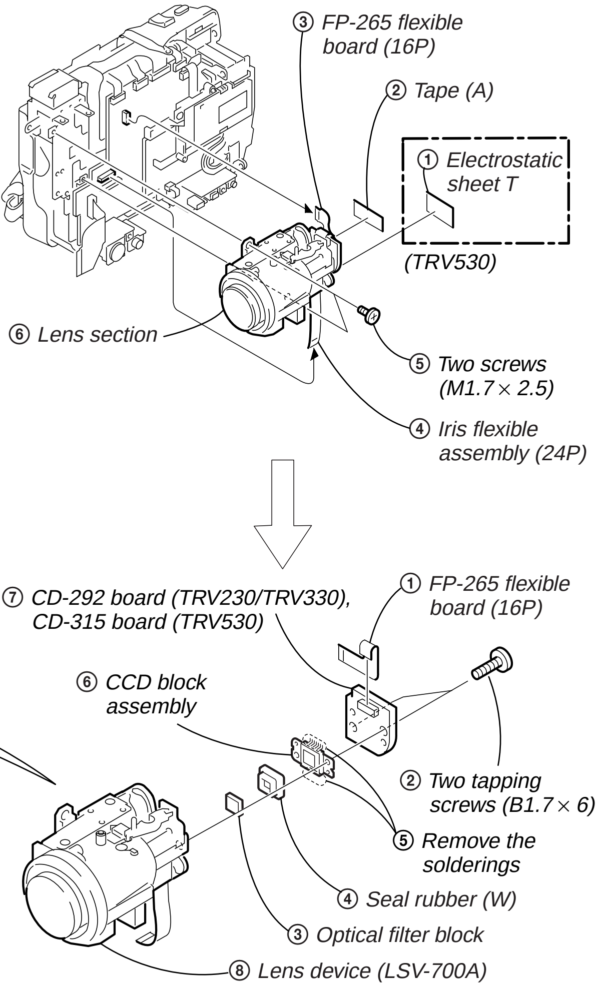
REMOVING THE VF LENS (B) ASSEMBLY


⑪ VF lens (B) assembly
① Two claws
⑨ LCD (LCX032AP-J) (16P)
⑧ LCD cushion
⑥ Prism sheet (2)
⑤ Illuminator (1)
⑩ LCD cushion (1)
⑦ Prism sheet (1)
③ Two claws
④ Lamp guide
② LB-068 board (TRV230/TRV330), LB-070 board (TRV530)

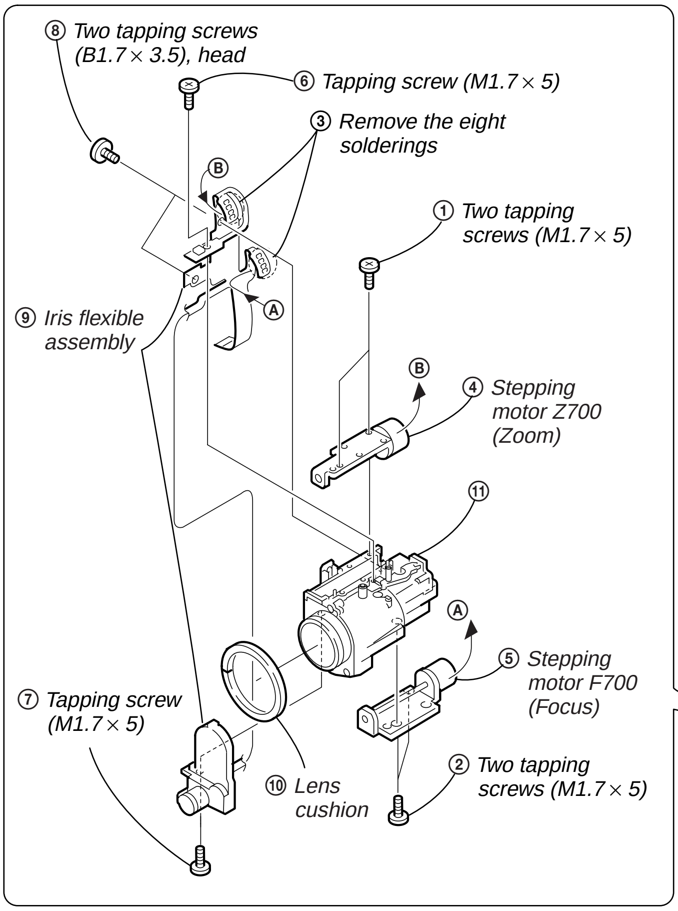
[LB-068/070, CF-079/080, SI-028/029 BOARDS SERVICE POSITION]


② Claw
CN1108
CN1108
1
20
③ CPC lid (BT)
① MI screw (M2 × 4) (H)
CPC-13 jig (J-6082-443-A)
DC IN
AC POWER ADAPTOR
AC IN
LANC jack
Adjustment remote commander (RM-95)
FP-266 flexible board (26P)
Front panel section
Harness (VP-076) (20P)
Flexible flat cable (FFC-001) (45P)
CF-079 board (TRV230/TRV330), CF-080 board (TRV530)
CF-Board
FP-268 flexible board (20P)
LB-068 board (TRV230/TRV330), LB-070 board (TRV530)
VF lens
SI-028 board (TRV230/TRV330), SI-029 board (TRV530)
Cabinet (R) block assembly

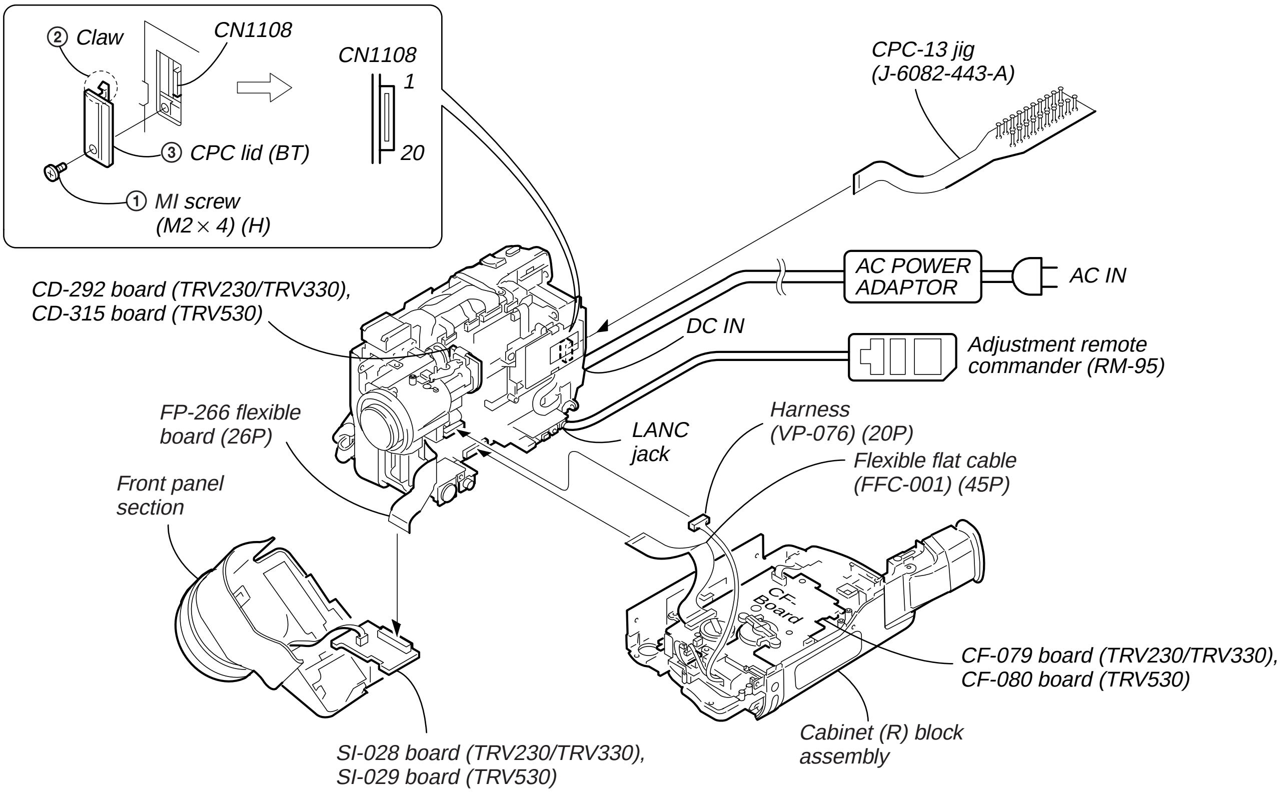
2-8. LENS SECTION, CD-292/315 BOARD


③ FP-265 flexible board (16P)
② Tape (A)
① Electrostatic sheet T
(TRV530)
⑥ Lens section
⑤ Two screws (M1.7 × 2.5)
④ Iris flexible assembly (24P)
⑦ CD-292 board (TRV230/TRV330), CD-315 board (TRV530)
① FP-265 flexible board (16P)
⑥ CCD block assembly
② Two tapping screws (B1.7 × 6)
⑤ Remove the solderings
④ Seal rubber (W)
③ Optical filter block
⑧ Lens device (LSV-700A)

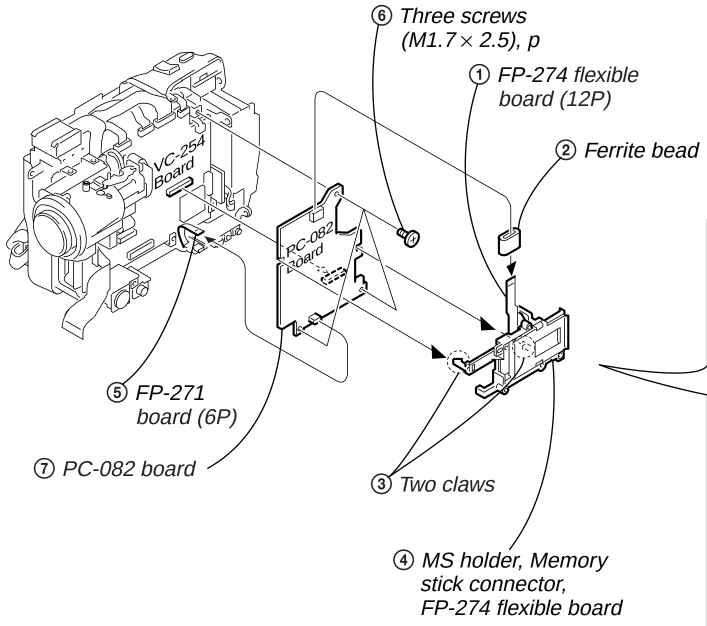
REMOVING THE IRIS FLEXIBLE ASSEMBLY


⑧ Two tapping screws (B1.7 × 3.5), head
⑥ Tapping screw (M1.7 × 5)
③ Remove the eight solderings
B
① Two tapping screws (M1.7 × 5)
⑨ Iris flexible assembly
A
B
④ Stepping motor Z700 (Zoom)
⑪
A
⑤ Stepping motor F700 (Focus)
⑦ Tapping screw (M1.7 × 5)
⑩ Lens cushion
② Two tapping screws (M1.7 × 5)

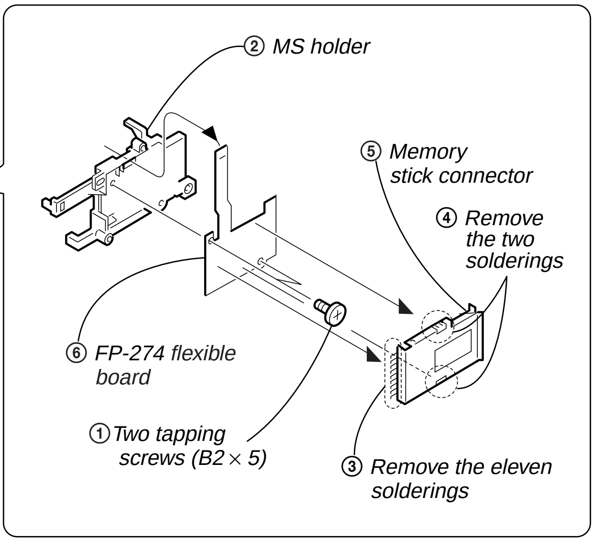
[CD-292/315, CF-079/080, SI-028/029 BOARDS SERVICE POSITION]


② Claw
CN1108
CN1108
1
20
③ CPC lid (BT)
① MI screw (M2 × 4) (H)
CPC-13 jig (J-6082-443-A)
AC POWER ADAPTOR
AC IN
CD-292 board (TRV230/TRV330), CD-315 board (TRV530)
DC IN
Adjustment remote commander (RM-95)
FP-266 flexible board (26P)
Harness (VP-076) (20P)
LANC jack
Flexible flat cable (FFC-001) (45P)
Front panel section
CF-Board
CF-079 board (TRV230/TRV330), CF-080 board (TRV530)
Cabinet (R) block assembly
SI-028 board (TRV230/TRV330), SI-029 board (TRV530)

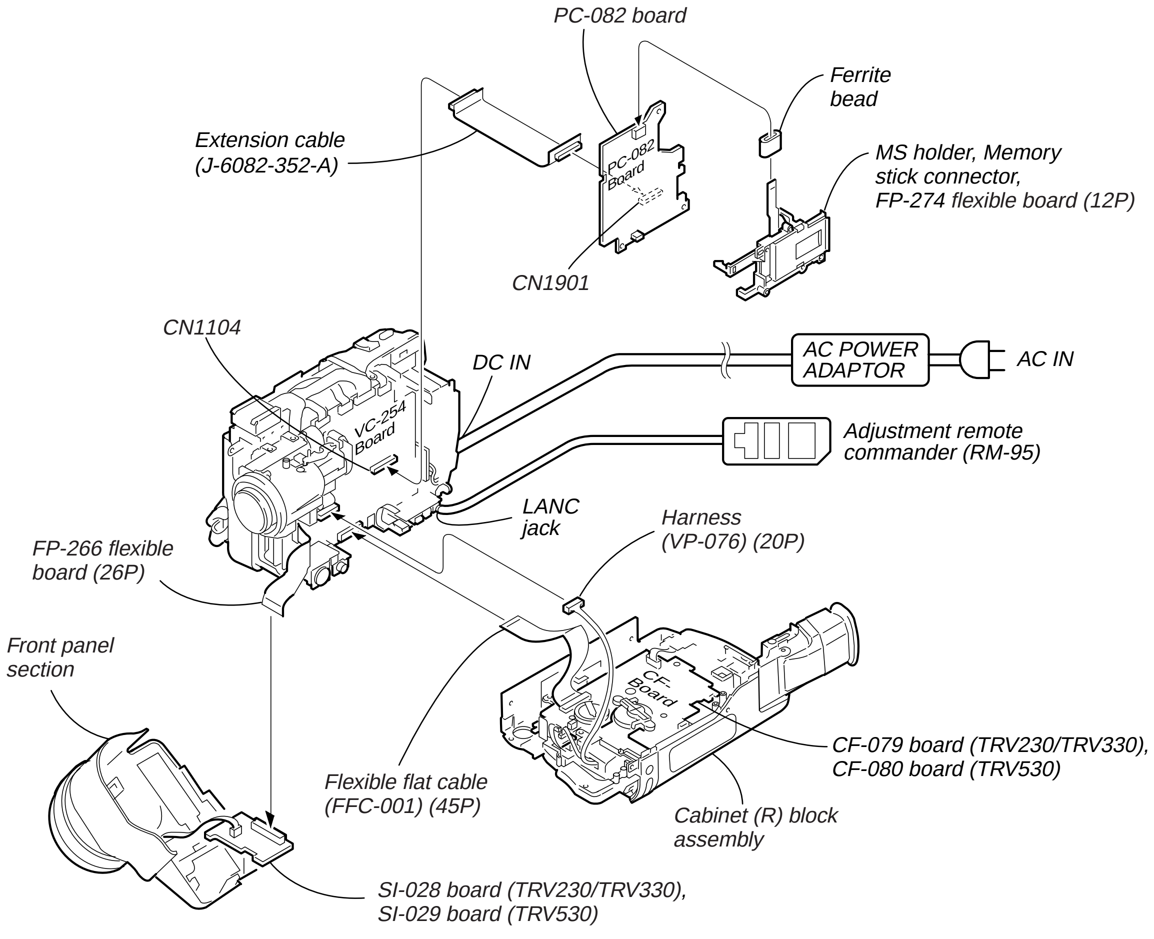
2-9. PC-082 BOARD (TRV330/TRV530)


⑥ Three screws (M1.7 × 2.5), p
① FP-274 flexible board (12P)
② Ferrite bead
VC-254 Board
PC-082 Board
⑤ FP-271 board (6P)
⑦ PC-082 board
③ Two claws
④ MS holder, Memory stick connector, FP-274 flexible board

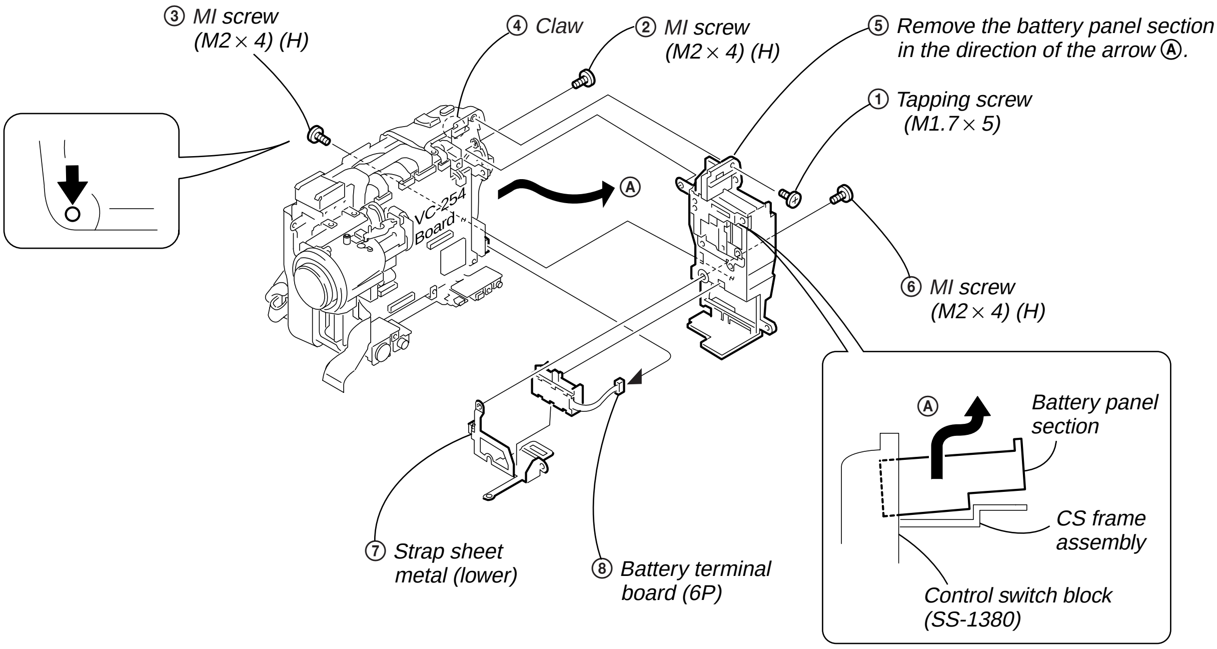
REMOVING THE FP-274 FLEXIBLE BOARD


② MS holder
⑤ Memory stick connector
④ Remove the two solderings
⑥ FP-274 flexible board
① Two tapping screws (B2 × 5)
③ Remove the eleven solderings

[PC-082, CF-079/080, SI-028/029 BOARDS SERVICE POSITION]


PC-082 board
Ferrite bead
Extension cable (J-6082-352-A)
PC-082 Board
MS holder, Memory stick connector, FP-274 flexible board (12P)
CN1901
CN1104
DC IN
AC POWER ADAPTOR
AC IN
VC-254 Board
Adjustment remote commander (RM-95)
LANC jack
Harness (VP-076) (20P)
FP-266 flexible board (26P)
Front panel section
CF- Board
CF-079 board (TRV230/TRV330), CF-080 board (TRV530)
Flexible flat cable (FFC-001) (45P)
Cabinet (R) block assembly
SI-028 board (TRV230/TRV330), SI-029 board (TRV530)

2-10. BATTERY PANEL SECTION, BATTERY TERMINAL BOARD


VC-254
Board
Ⓐ
Ⓐ
Battery panel section
CS frame assembly
Control switch block (SS-1380)

① Tapping screw (M1.7 × 5)

② MI screw (M2 × 4) (H)

③ MI screw (M2 × 4) (H)

④ Claw

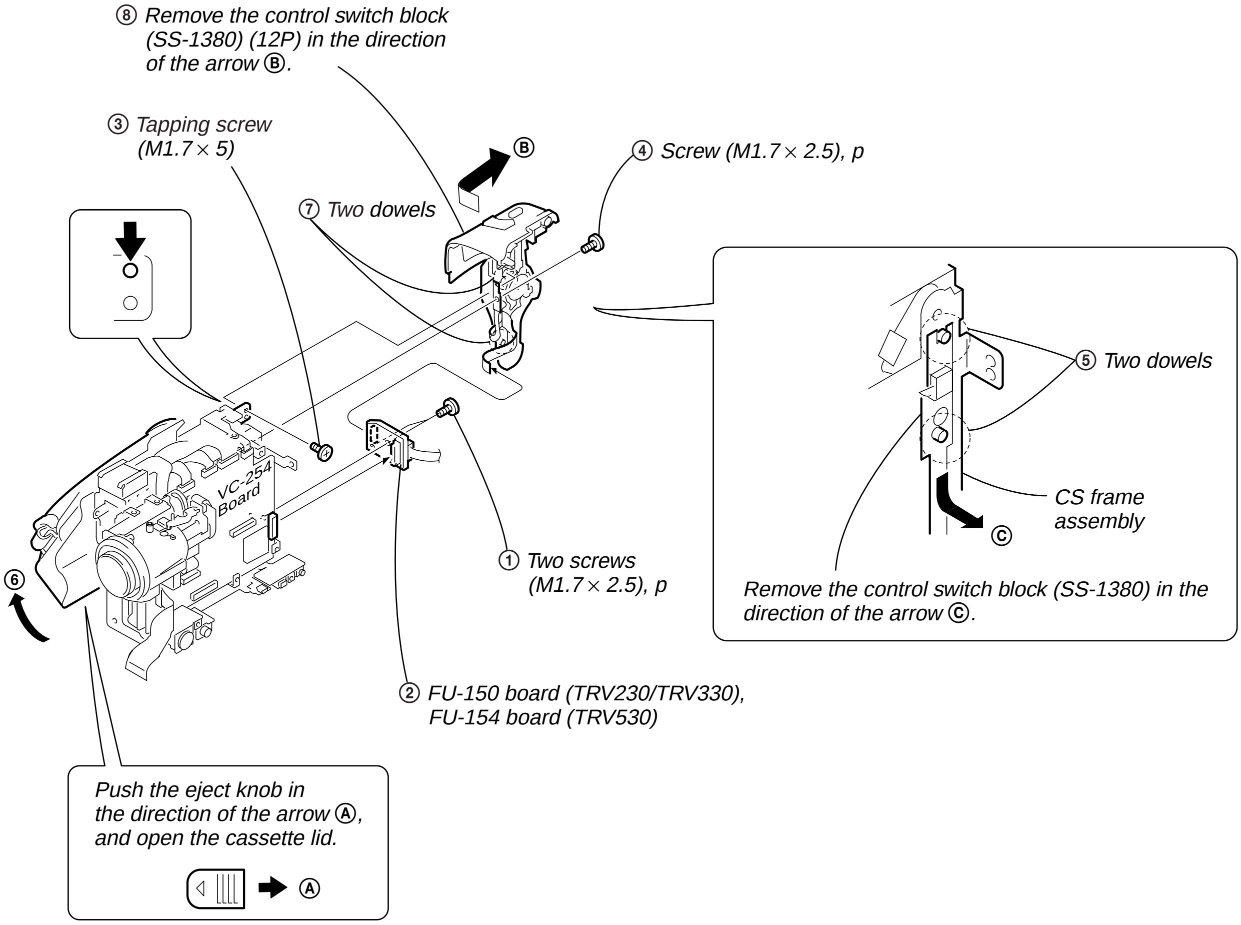
⑤ Remove the battery panel section in the direction of the arrow Ⓐ.

⑥ MI screw (M2 × 4) (H)

⑦ Strap sheet metal (lower)

⑧ Battery terminal board (6P)

2-11. CONTROL SWITCH BLOCK (SS-1380), FU-150/154 BOARD


Ⓑ
VC-254
Board
⑥
⑤ Two dowels
CS frame assembly
Ⓒ
Ⓐ

① Two screws (M1.7 × 2.5), p

② FU-150 board (TRV230/TRV330), FU-154 board (TRV530)

③ Tapping screw (M1.7 × 5)

④ Screw (M1.7 × 2.5), p

⑦ Two dowels

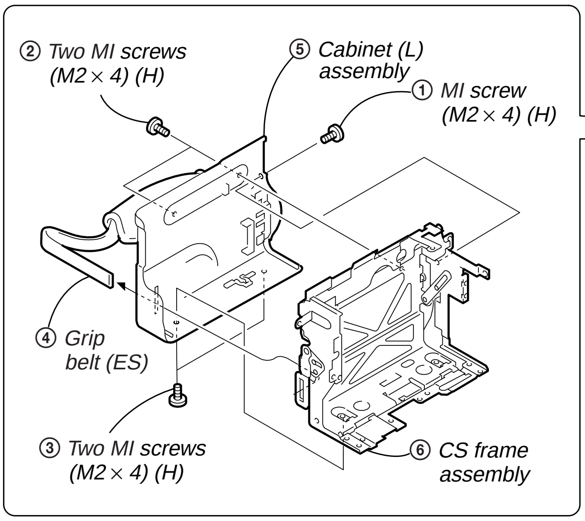
⑧ Remove the control switch block (SS-1380) (12P) in the direction of the arrow Ⓑ.

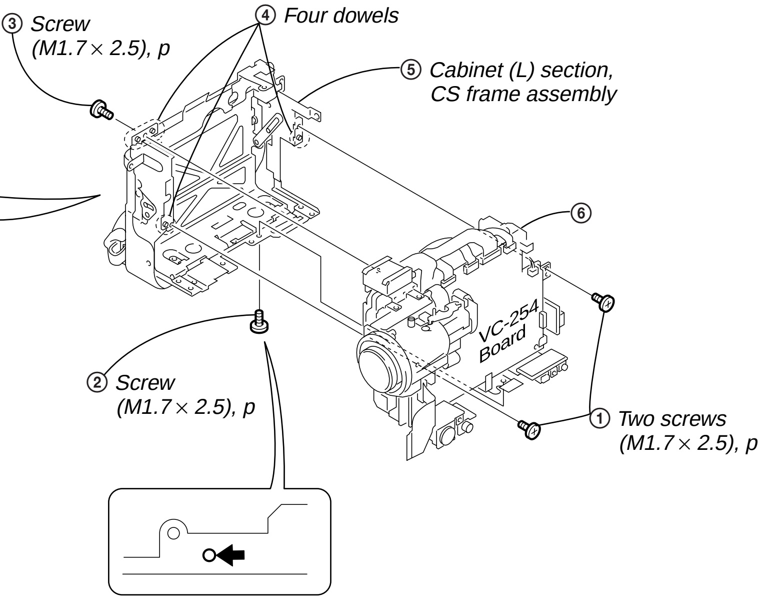
Remove the control switch block (SS-1380) in the direction of the arrow Ⓒ.

Push the eject knob in the direction of the arrow Ⓐ, and open the cassette lid.

2-12. CABINET (L) SECTION, MECHANISM DECK-1

REMOVING THE CS FRAME ASSEMBLY


② Two MI screws (M2 × 4) (H)
⑤ Cabinet (L) assembly
① MI screw (M2 × 4) (H)
④ Grip belt (ES)
③ Two MI screws (M2 × 4) (H)
⑥ CS frame assembly

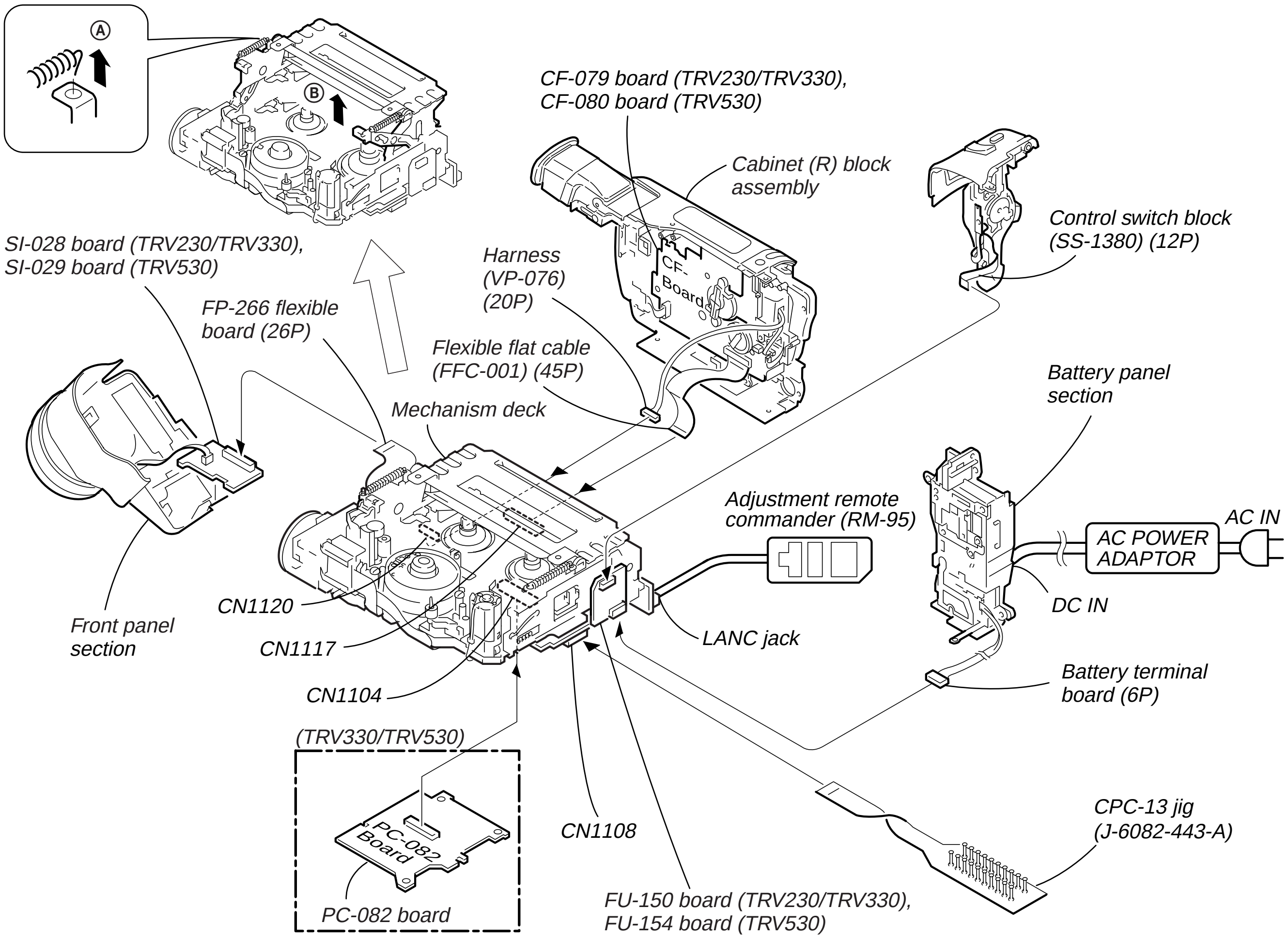

③ Screw (M1.7 × 2.5), p
④ Four dowels
⑤ Cabinet (L) section, CS frame assembly
⑥
VC-254 Board
② Screw (M1.7 × 2.5), p
① Two screws (M1.7 × 2.5), p

[MECHANISM DECK SERVICE POSITION-1]

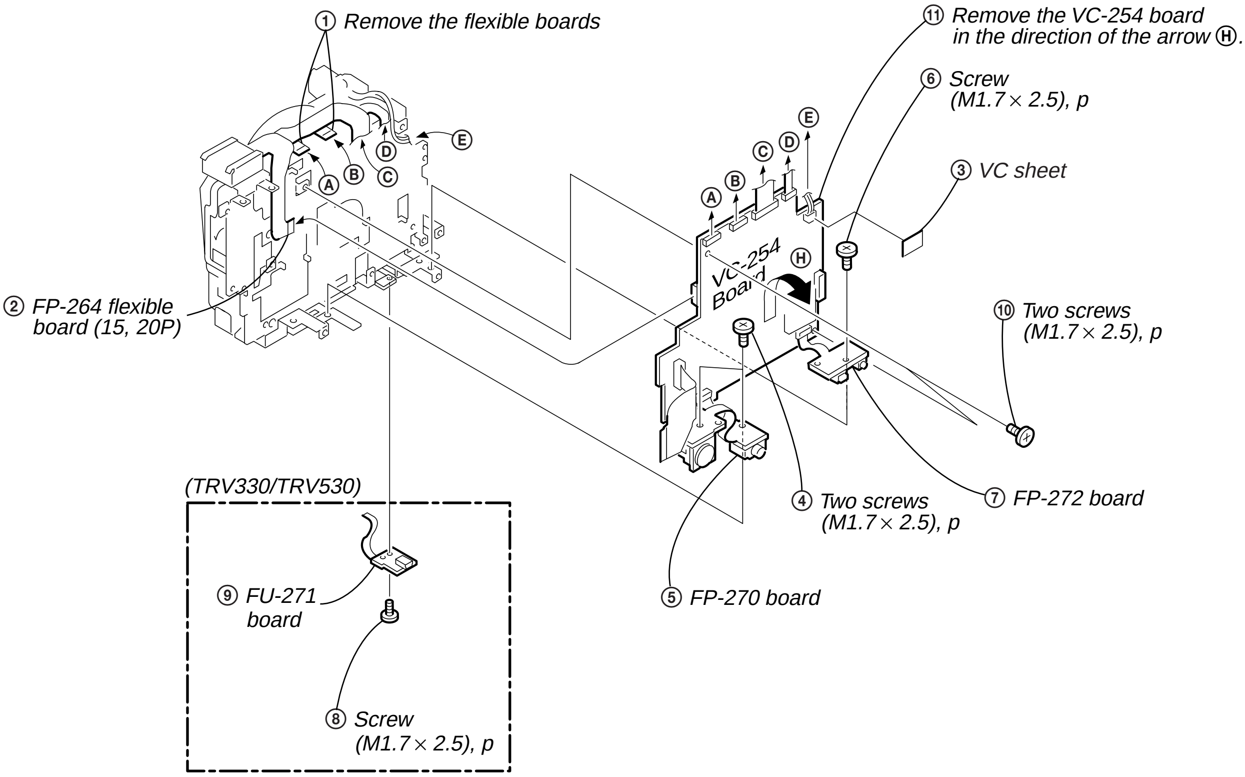
Note: Use the parts only which can be removed easily from outside of the mechanism deck.
Operate the VTR using the adjustment remote commander. (with the HOLD switch set in the OFF position)

How to raise the cassette compartment manually

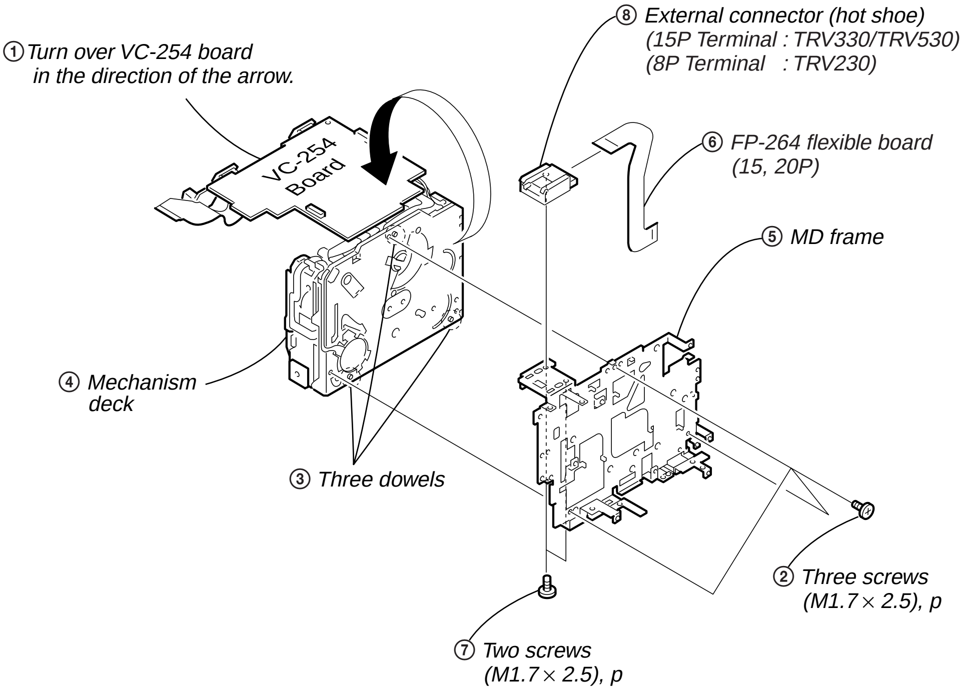
(Remove the hook in the direction of the arrow Ⓐ to raise the cassette compartment in the direction of the arrow Ⓑ.)


Ⓐ
Ⓑ
CF-079 board (TRV230/TRV330), CF-080 board (TRV530)
Cabinet (R) block assembly
CF Board
Control switch block (SS-1380) (12P)
SI-028 board (TRV230/TRV330), SI-029 board (TRV530)
Harness (VP-076) (20P)
FP-266 flexible board (26P)
Flexible flat cable (FFC-001) (45P)
Battery panel section
Mechanism deck
Adjustment remote commander (RM-95)
AC IN
AC POWER ADAPTOR
DC IN
CN1120
Front panel section
LANC jack
CN1117
Battery terminal board (6P)
CN1104
(TRV330/TRV530)
PC-082 Board
CN1108
CPC-13 jig (J-6082-443-A)
PC-082 board
FU-150 board (TRV230/TRV330), FU-154 board (TRV530)

2-13. VC-254 BOARD

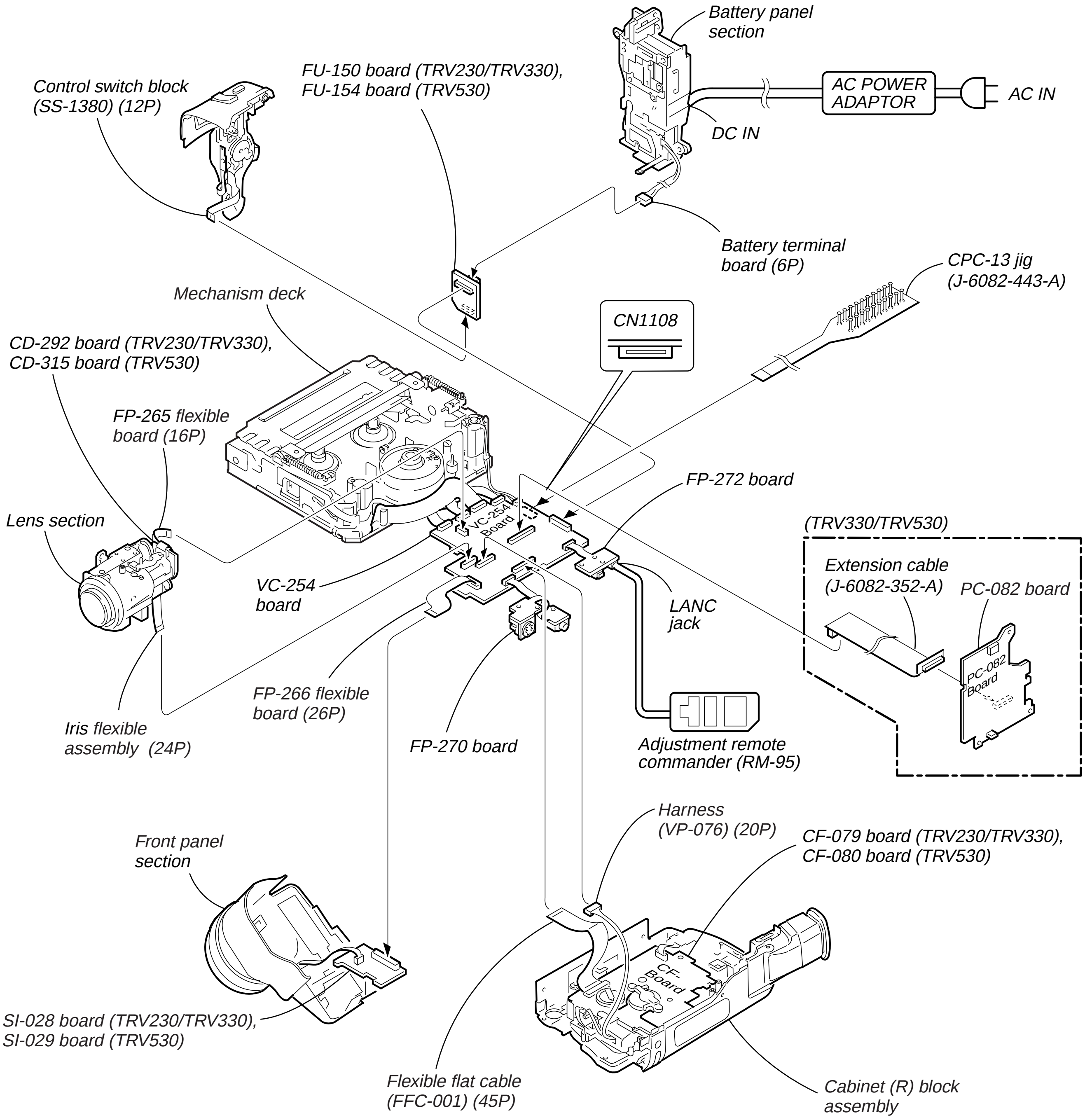

① Remove the flexible boards
⑪ Remove the VC-254 board in the direction of the arrow Ⓗ.
⑥ Screw (M1.7 × 2.5), p
③ VC sheet
② FP-264 flexible board (15, 20P)
⑩ Two screws (M1.7 × 2.5), p
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ
Ⓗ
VC-254 Board
(TRV330/TRV530)
④ Two screws (M1.7 × 2.5), p
⑦ FP-272 board
⑨ FU-271 board
⑤ FP-270 board
⑧ Screw (M1.7 × 2.5), p

2-14. MECHANISM DECK-2, MD FRAME


⑧ External connector (hot shoe)
(15P Terminal : TRV330/TRV530)
(8P Terminal : TRV230)
① Turn over VC-254 board in the direction of the arrow.
VC-254 Board
⑥ FP-264 flexible board (15, 20P)
⑤ MD frame
④ Mechanism deck
③ Three dowels
② Three screws (M1.7 × 2.5), p
⑦ Two screws (M1.7 × 2.5), p

[CONNECTION DIAGRAM FOR SERVICE POSITION (Mainly for voltage measurement and check)]
(VC-254, FU-150/154, CD-292/315, SI-028/029, PC-082, CF-079/080 BOARDS MECHANISM DECK-2)

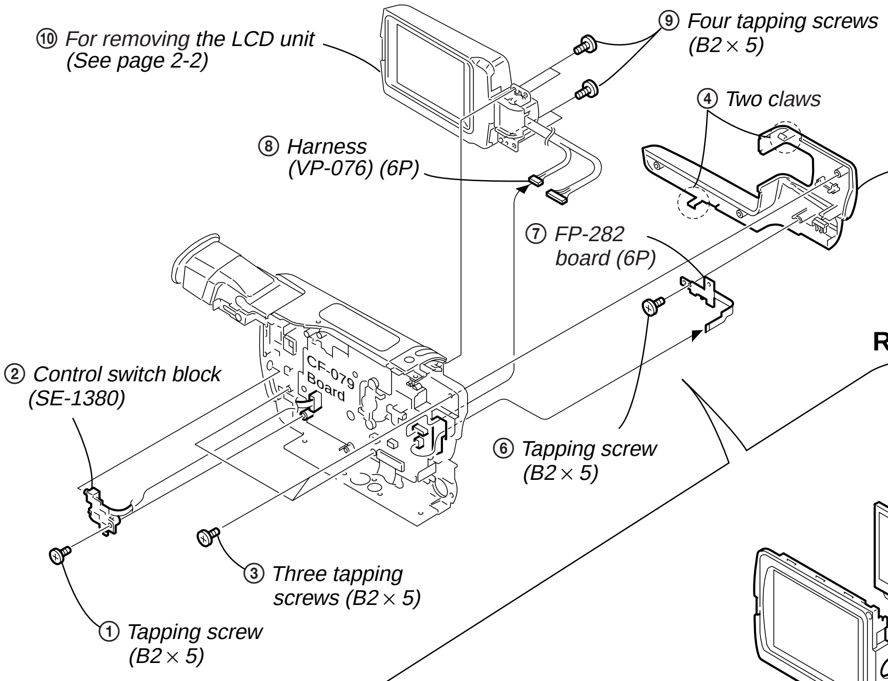
Note: *Operate the VTR using the adjustment remote commander (with the HOLD switch set in the OFF position)*



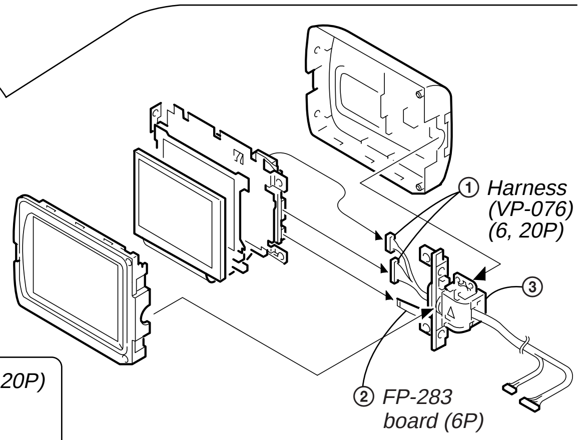
Battery panel section
AC POWER ADAPTOR
AC IN
DC IN
Control switch block (SS-1380) (12P)
FU-150 board (TRV230/TRV330),
FU-154 board (TRV530)
Battery terminal board (6P)
CPC-13 jig (J-6082-443-A)
Mechanism deck
CN1108
CD-292 board (TRV230/TRV330),
CD-315 board (TRV530)
FP-265 flexible board (16P)
FP-272 board
Lens section
VC-254 Board
(TRV330/TRV530)
Extension cable (J-6082-352-A)
PC-082 board
PC-082 Board
VC-254 board
LANC jack
FP-266 flexible board (26P)
Iris flexible assembly (24P)
FP-270 board
Adjustment remote commander (RM-95)
Harness (VP-076) (20P)
CF-079 board (TRV230/TRV330),
CF-080 board (TRV530)
Front panel section
CF-Board
SI-028 board (TRV230/TRV330),
SI-029 board (TRV530)
Flexible flat cable (FFC-001) (45P)
Cabinet (R) block assembly

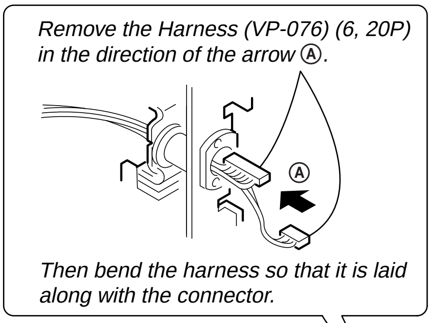
2-15. HINGE SECTION

[TRV230/TRV330 MODEL]

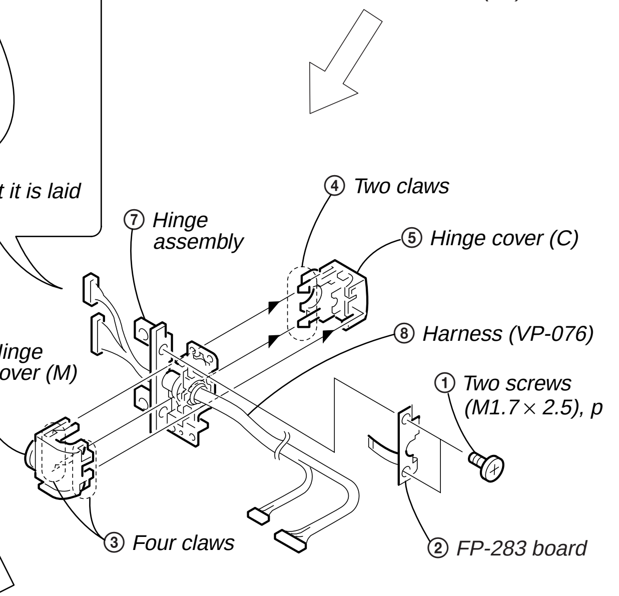

⑩ For removing the LCD unit (See page 2-2)
⑨ Four tapping screws (B2 × 5)
④ Two claws
⑧ Harness (VP-076) (6P)
⑤ Hinge cover (140) assembly
⑦ FP-282 board (6P)
CF-079 Board
② Control switch block (SE-1380)
⑥ Tapping screw (B2 × 5)
③ Three tapping screws (B2 × 5)
① Tapping screw (B2 × 5)

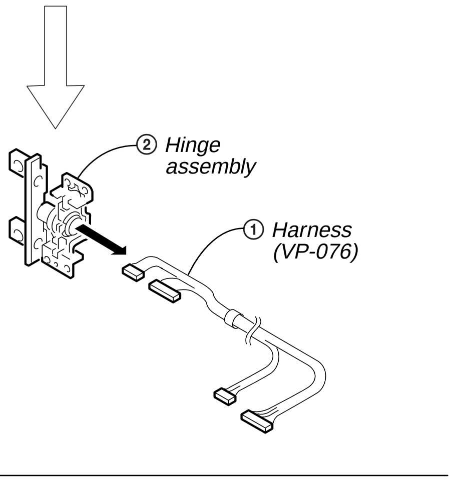
REMOVING THE HINGE ASSEMBLY


① Harness (VP-076) (6, 20P)
③
② FP-283 board (6P)

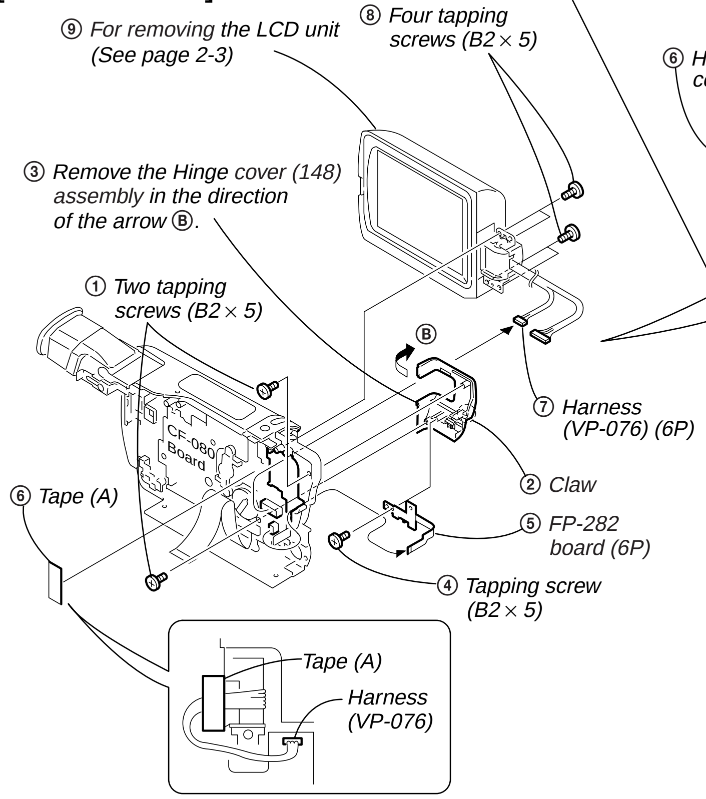

Remove the Harness (VP-076) (6, 20P) in the direction of the arrow Ⓐ.

Then bend the harness so that it is laid along with the connector.

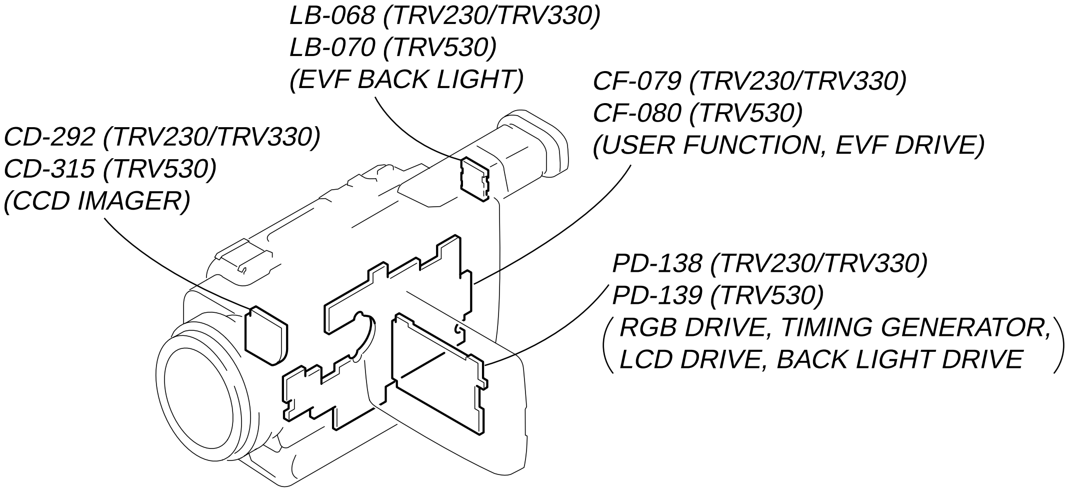

④ Two claws
⑦ Hinge assembly
⑤ Hinge cover (C)
⑥ Hinge cover (M)
⑧ Harness (VP-076)
① Two screws (M1.7 × 2.5), p
③ Four claws
② FP-283 board

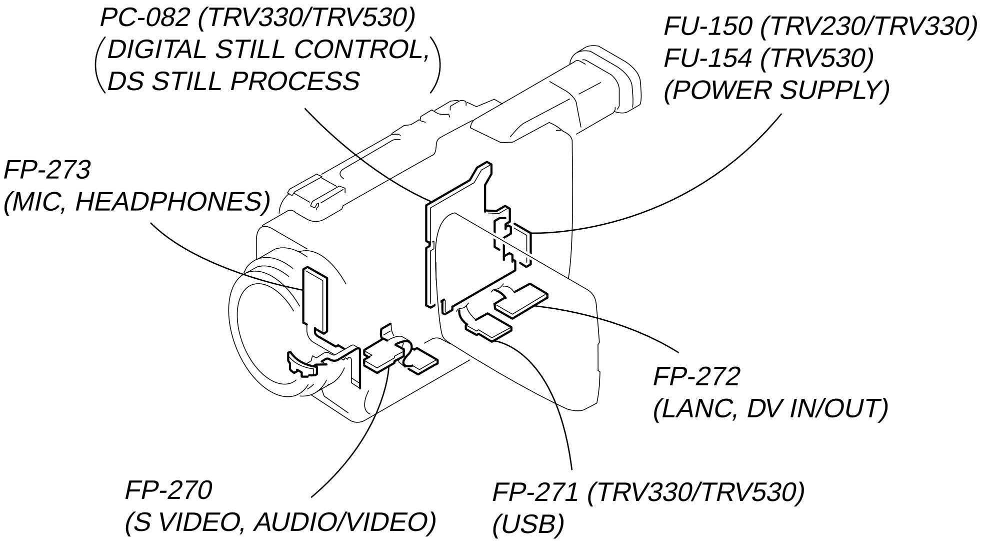

② Hinge assembly
① Harness (VP-076)

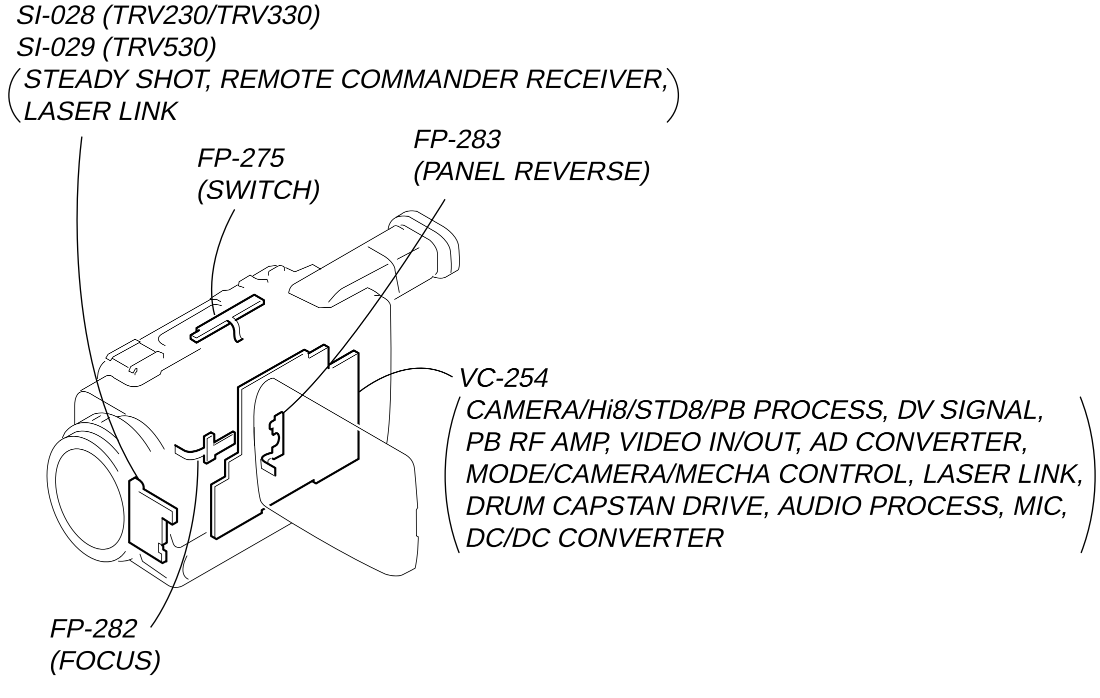
[TRV530 MODEL]


⑨ For removing the LCD unit (See page 2-3)
⑧ Four tapping screws (B2 × 5)
③ Remove the Hinge cover (148) assembly in the direction of the arrow Ⓑ.
① Two tapping screws (B2 × 5)
Ⓑ
CF-080 Board
⑦ Harness (VP-076) (6P)
② Claw
⑥ Tape (A)
⑤ FP-282 board (6P)
④ Tapping screw (B2 × 5)
Tape (A)
Harness (VP-076)

2-16. CIRCUIT BOARDS LOCATION

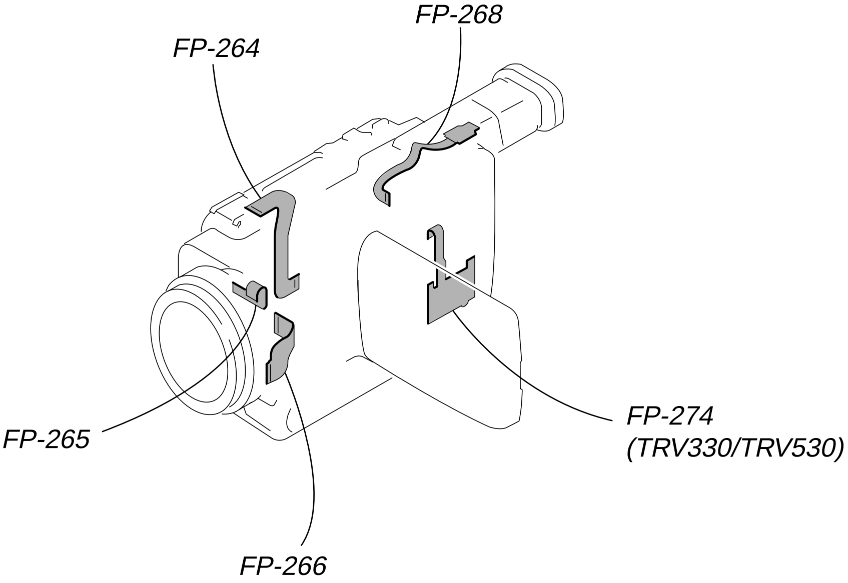

LB-068 (TRV230/TRV330)
LB-070 (TRV530)
(EVF BACK LIGHT)
CF-079 (TRV230/TRV330)
CF-080 (TRV530)
(USER FUNCTION, EVF DRIVE)
CD-292 (TRV230/TRV330)
CD-315 (TRV530)
(CCD IMAGER)
PD-138 (TRV230/TRV330)
PD-139 (TRV530)
(RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE)

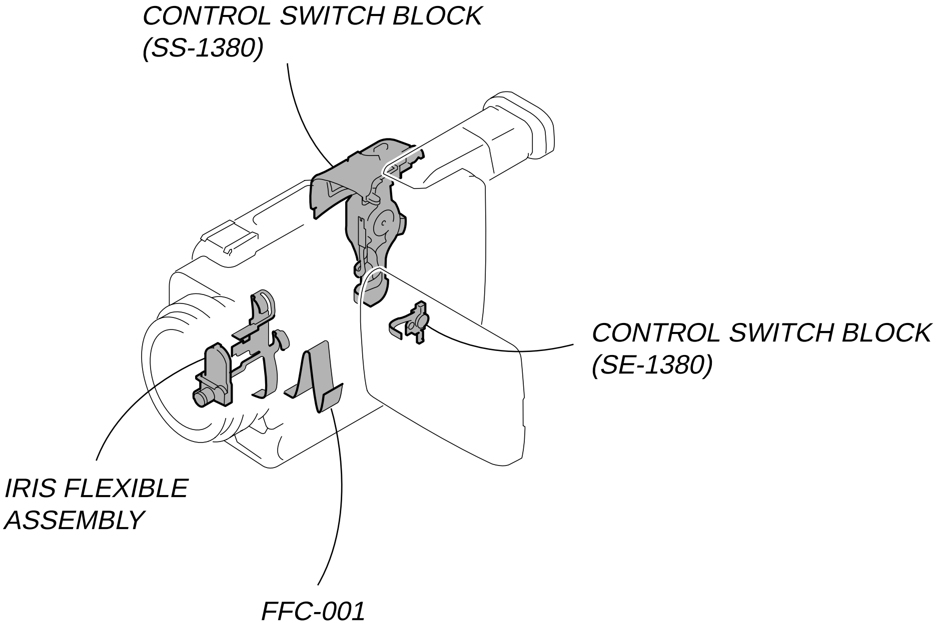

PC-082 (TRV330/TRV530)
(DIGITAL STILL CONTROL, DS STILL PROCESS)
FU-150 (TRV230/TRV330)
FU-154 (TRV530)
(POWER SUPPLY)
FP-273
(MIC, HEADPHONES)
FP-272
(LANC, DV IN/OUT)
FP-270
(S VIDEO, AUDIO/VIDEO)
FP-271 (TRV330/TRV530)
(USB)


SI-028 (TRV230/TRV330)
SI-029 (TRV530)
(STEADY SHOT, REMOTE COMMANDER RECEIVER, LASER LINK)
FP-275
(SWITCH)
FP-283
(PANEL REVERSE)
VC-254
(CAMERA/Hi8/STD8/PB PROCESS, DV SIGNAL, PB RF AMP, VIDEO IN/OUT, AD CONVERTER, MODE/CAMERA/MECHA CONTROL, LASER LINK, DRUM CAPSTAN DRIVE, AUDIO PROCESS, MIC, DC/DC CONVERTER)
FP-282
(FOCUS)

2-17. FLEXIBLE BOARDS LOCATION

The flexible boards contained in the mechanism deck are not shown.

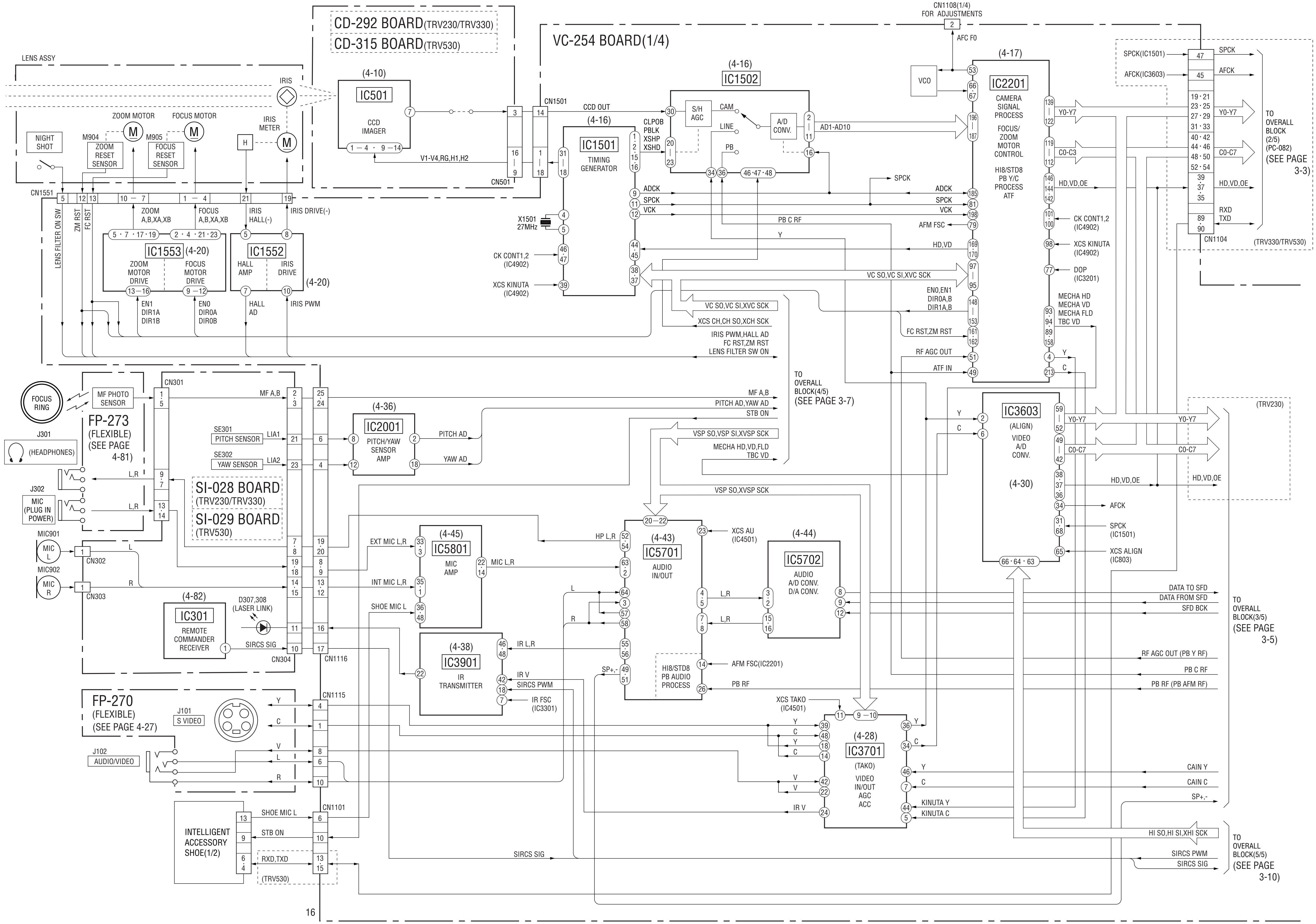

FP-268
FP-264
FP-265
FP-274
(TRV330/TRV530)
FP-266


CONTROL SWITCH BLOCK
(SS-1380)
CONTROL SWITCH BLOCK
(SE-1380)
IRIS FLEXIBLE
ASSEMBLY
FFC-001

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/5)

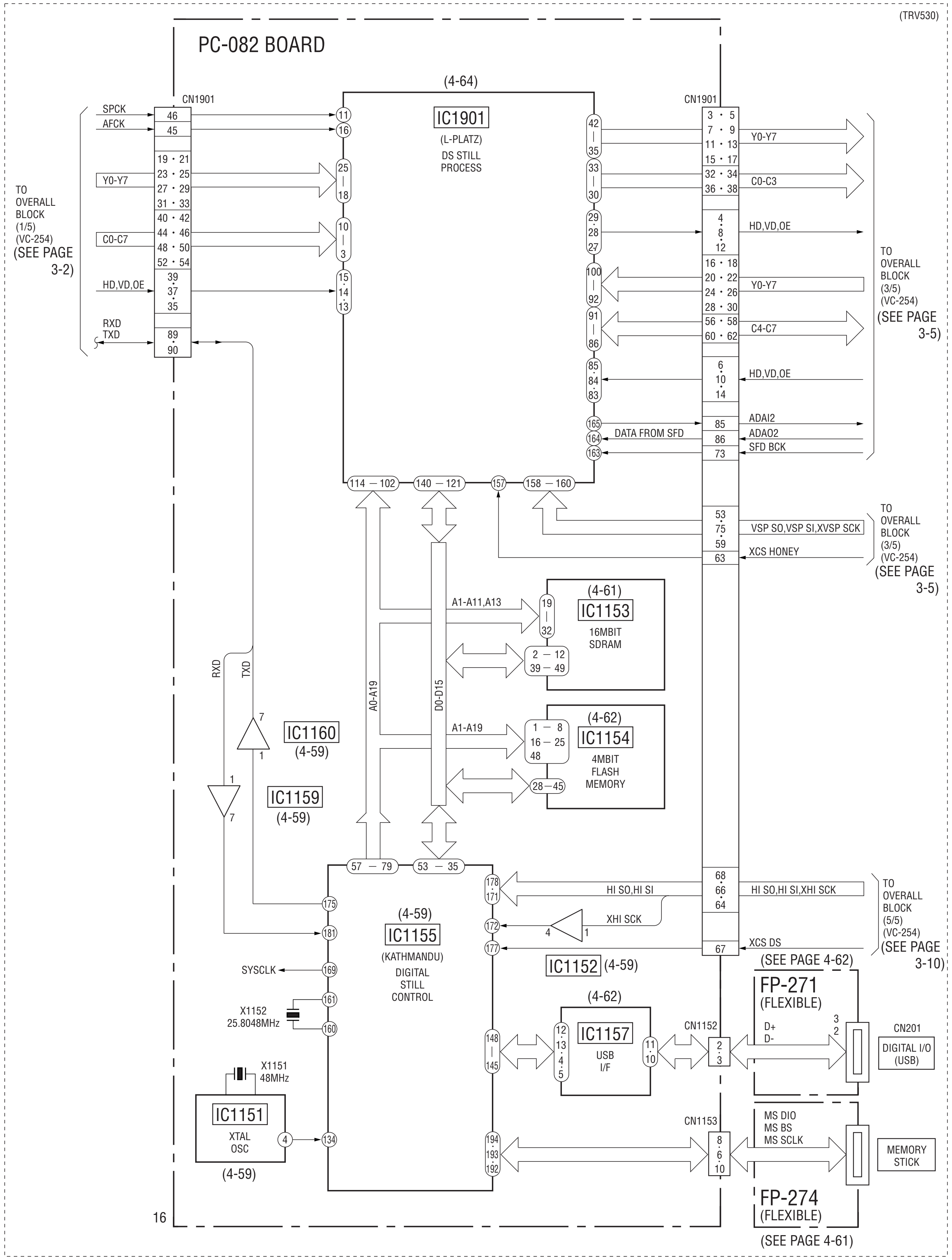
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

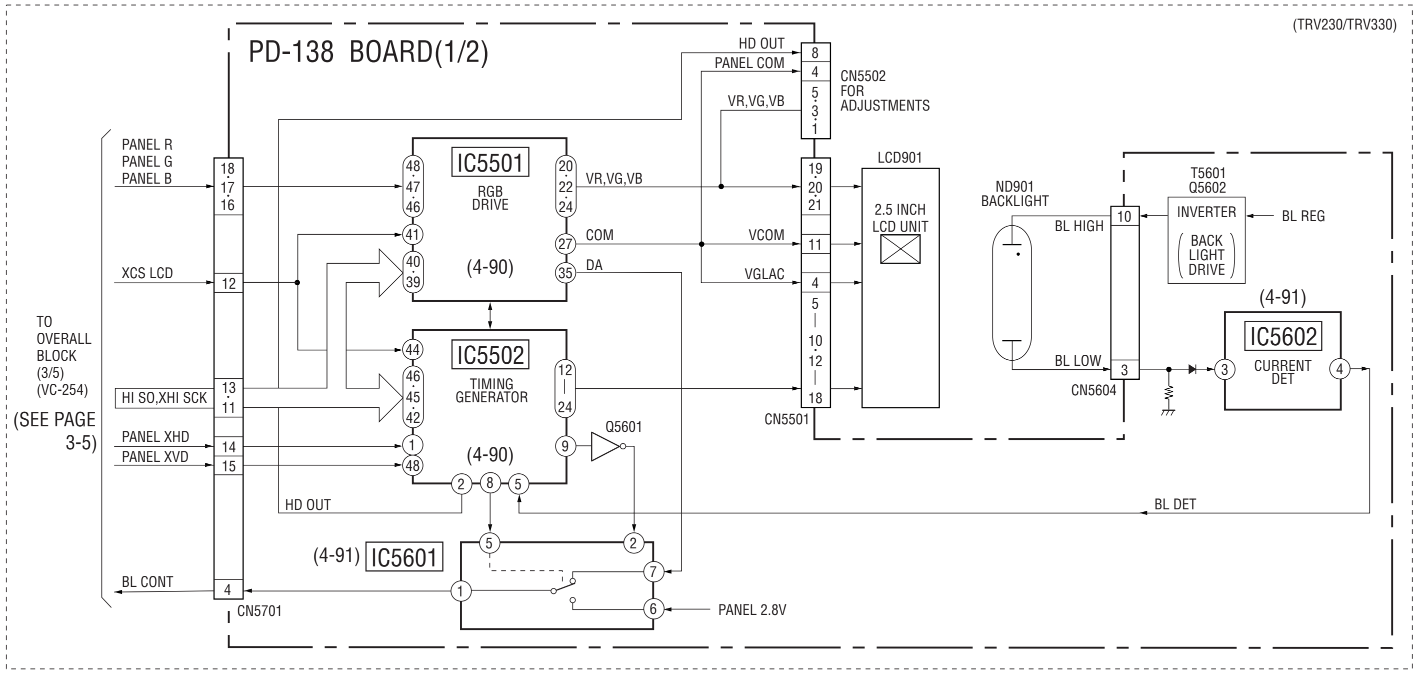


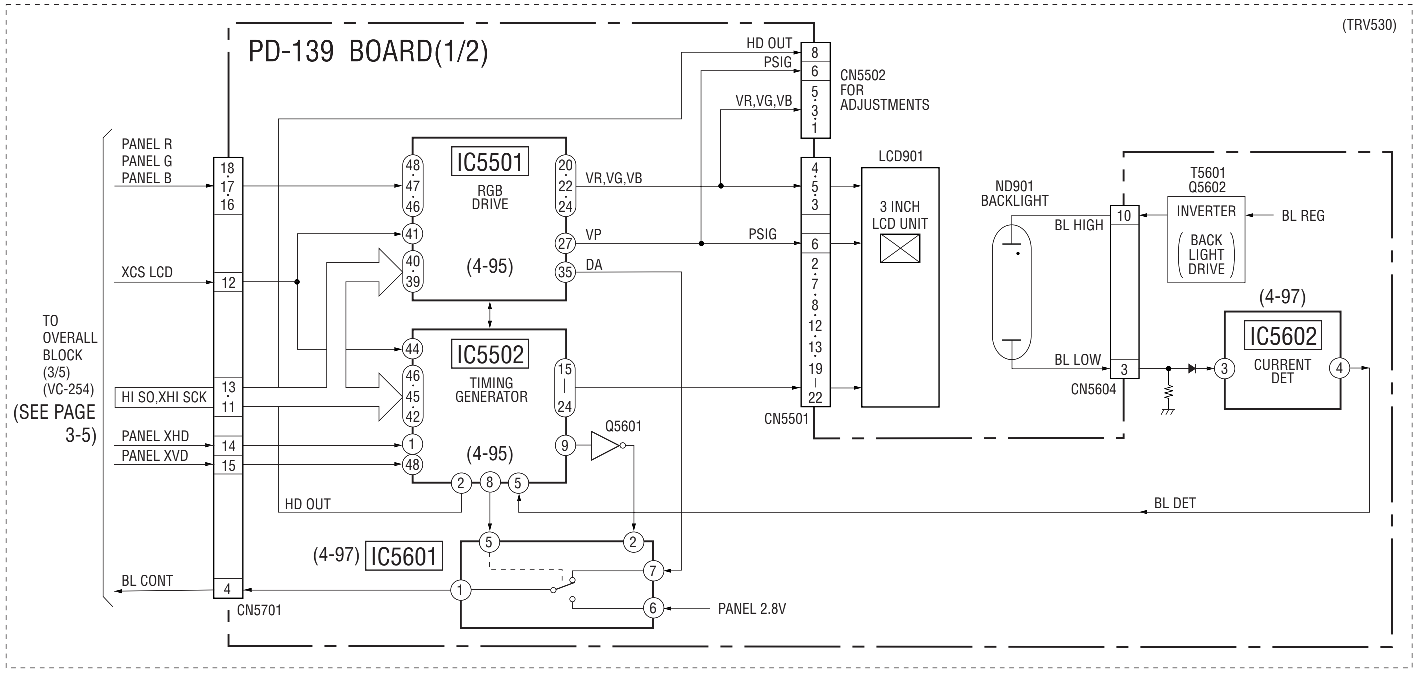
CD-292 BOARD(TRV230/TRV330)
CD-315 BOARD(TRV530)
VC-254 BOARD(1/4)
LENS ASSY
IRIS
ZOOM MOTOR
FOCUS MOTOR
IRIS METER
NIGHT SHOT
M904
M905
ZOOM RESET SENSOR
FOCUS RESET SENSOR
CN1551
CN501
CN1501
LENS FILTER ON SW
ZM RST
FC RST
ZOOM A,B,XA,XB
FOCUS A,B,XA,XB
IRIS HALL(-)
IRIS DRIVE(-)
IC1553 (4-20) ZOOM MOTOR DRIVE FOCUS MOTOR DRIVE
IC1552 HALL AMP IRIS DRIVE (4-20)
EN1 DIR1A DIR1B
EN0 DIR0A DIR0B
HALL AD
IRIS PWM
(4-10) IC501 CCD IMAGER
V1-V4,RG,H1,H2
CCD OUT
(4-16) IC1501 TIMING GENERATOR
CLPOB PBLK XSHP XSHD
X1501 27MHz
CK CONT1,2 (IC4902)
XCS KINUTA (IC4902)
(4-16) IC1502 S/H AGC CAM LINE PB A/D CONV.
AD1-AD10
ADCK SPCK VCK
PB C RF
Y
HD,VD
VC SO,VC SI,XVC SCK
XCS CH,CH SO,XCH SCK
IRIS PWM,HALL AD FC RST,ZM RST LENS FILTER SW ON
CN1108(1/4) FOR ADJUSTMENTS
AFC F0
VCO
(4-17) IC2201 CAMERA SIGNAL PROCESS FOCUS/ZOOM MOTOR CONTROL HI8/STD8 PB Y/C PROCESS ATF
AFM FSC
EN0,EN1 DIR0A,B DIR1A,B
FC RST,ZM RST
RF AGC OUT
ATF IN
Y0-Y7
C0-C3
HD,VD,OE
CK CONT1,2 (IC4902)
XCS KINUTA (IC4902)
DOP (IC3201)
MECHA HD MECHA VD MECHA FLD TBC VD
SPCK(IC1501)
AFCK(IC3603)
SPCK AFCK
C0-C7
RXD TXD
CN1104
(TRV330/TRV530)
TO OVERALL BLOCK (2/5) (PC-082) (SEE PAGE 3-3)
TO OVERALL BLOCK(4/5) (SEE PAGE 3-7)
MF A,B
PITCH AD,YAW AD
STB ON
VSP SO,VSP SI,XVSP SCK
MECHA HD,VD,FLD TBC VD
VSP SO,XVSP SCK
IC3603 (ALIGN) VIDEO A/D CONV. (4-30)
AFCK
SPCK (IC1501)
XCS ALIGN (IC803)
(TRV230)
FOCUS RING
MF PHOTO SENSOR
FP-273 (FLEXIBLE) (SEE PAGE 4-81)
CN301
J301 (HEADPHONES)
J302 MIC (PLUG IN POWER)
SE301 PITCH SENSOR LIA1
SE302 YAW SENSOR LIA2
SI-028 BOARD (TRV230/TRV330)
SI-029 BOARD (TRV530)
(4-36) IC2001 PITCH/YAW SENSOR AMP
PITCH AD
YAW AD
MIC901 MIC L
MIC902 MIC R
CN302
CN303
(4-82) IC301 REMOTE COMMANDER RECEIVER
D307,308 (LASER LINK)
SIRCS SIG
CN304
CN1116
(4-45) IC5801 MIC AMP
EXT MIC L,R
INT MIC L,R
SHOE MIC L
MIC L,R
(4-38) IC3901 IR TRANSMITTER
IR L,R
IR V
SIRCS PWM
IR FSC (IC3301)
HP L,R
(4-43) IC5701 AUDIO IN/OUT
HI8/STD8 PB AUDIO PROCESS
SP+,-
XCS AU (IC4501)
AFM FSC(IC2201)
PB RF
(4-44) IC5702 AUDIO A/D CONV. D/A CONV.
DATA TO SFD
DATA FROM SFD
SFD BCK
TO OVERALL BLOCK(3/5) (SEE PAGE 3-5)
RF AGC OUT (PB Y RF)
PB C RF
PB RF (PB AFM RF)
FP-270 (FLEXIBLE) (SEE PAGE 4-27)
J101 S VIDEO
J102 AUDIO/VIDEO
CN1115
XCS TAKO (IC4501)
(4-28) IC3701 (TAKO) VIDEO IN/OUT AGC ACC
CAIN Y
CAIN C
SP+,-
KINUTA Y
KINUTA C
INTELLIGENT ACCESSORY SHOE(1/2)
CN1101
SHOE MIC L
STB ON
RXD,TXD
(TRV530)
SIRCS SIG
HI SO,HI SI,XHI SCK
SIRCS PWM
SIRCS SIG
TO OVERALL BLOCK(5/5) (SEE PAGE 3-10)
16

3-2. OVERALL BLOCK DIAGRAM (2/5)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

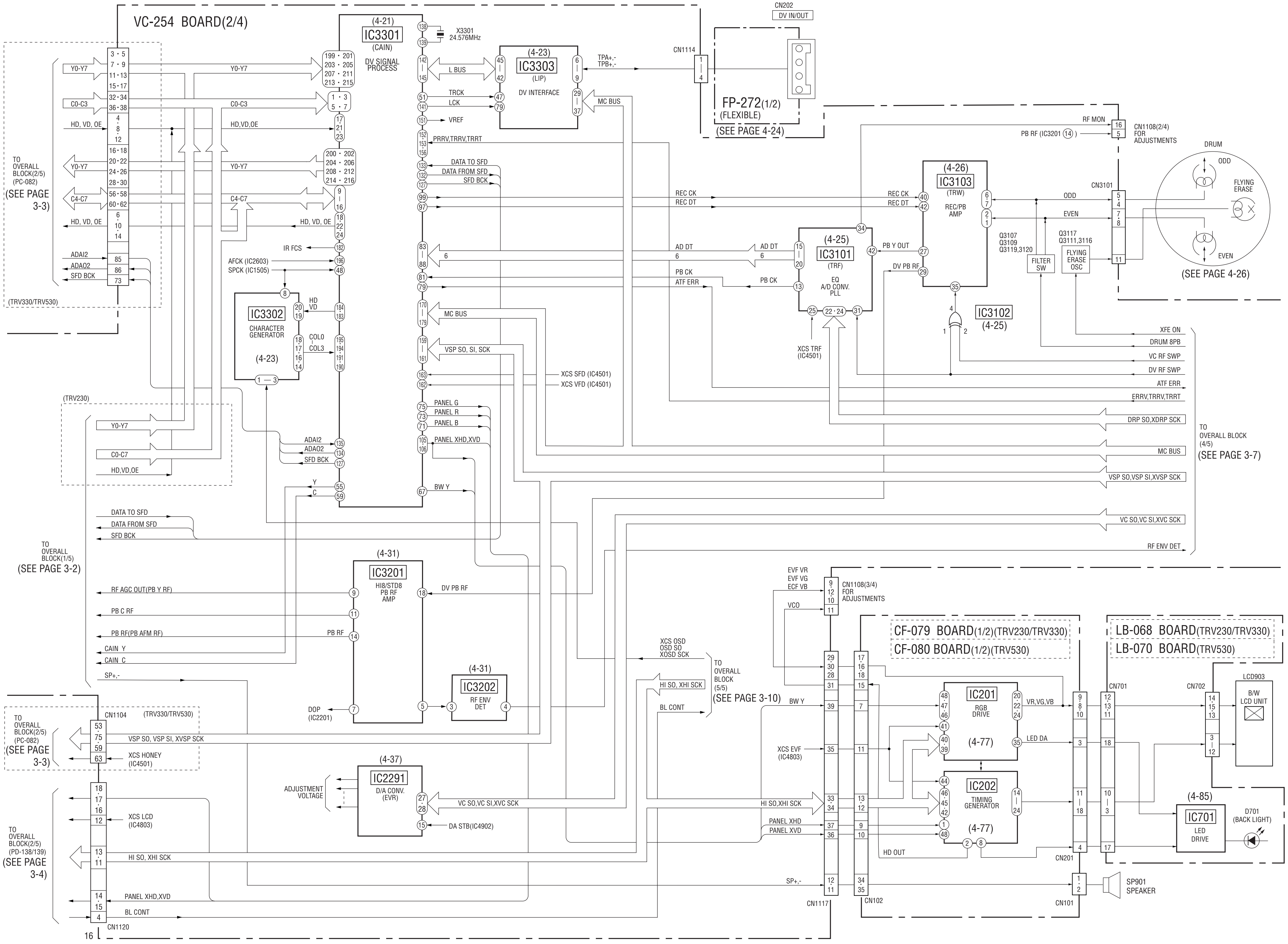

(TRV530)
PC-082 BOARD
CN1901
(4-64)
IC1901
(L-PLATZ)
DS STILL PROCESS
SPCK
AFCK
Y0-Y7
C0-C7
HD,VD,OE
RXD
TXD
TO OVERALL BLOCK (1/5) (VC-254) (SEE PAGE 3-2)
Y0-Y7
C0-C3
HD,VD,OE
C4-C7
ADAI2
ADAO2
SFD BCK
DATA FROM SFD
VSP SO,VSP SI,XVSP SCK
XCS HONEY
TO OVERALL BLOCK (3/5) (VC-254) (SEE PAGE 3-5)
A1-A11,A13
(4-61)
IC1153
16MBIT SDRAM
A1-A19
(4-62)
IC1154
4MBIT FLASH MEMORY
A0-A19
D0-D15
RXD
TXD
IC1160
(4-59)
IC1159
(4-59)
(4-59)
IC1155
(KATHMANDU)
DIGITAL STILL CONTROL
SYSCLK
X1152 25.8048MHz
X1151 48MHz
IC1151
XTAL OSC
(4-59)
HI SO,HI SI
XHI SCK
HI SO,HI SI,XHI SCK
XCS DS
TO OVERALL BLOCK (5/5) (VC-254) (SEE PAGE 3-10)
IC1152 (4-59)
(4-62)
IC1157
USB I/F
CN1152
(SEE PAGE 4-62)
FP-271 (FLEXIBLE)
D+
D-
CN201
DIGITAL I/O (USB)
CN1153
MS DIO
MS BS
MS SCLK
MEMORY STICK
FP-274 (FLEXIBLE)
(SEE PAGE 4-61)
16


(TRV230/TRV330)
PD-138 BOARD(1/2)
PANEL R
PANEL G
PANEL B
XCS LCD
HI SO,XHI SCK
PANEL XHD
PANEL XVD
BL CONT
TO OVERALL BLOCK (3/5) (VC-254) (SEE PAGE 3-5)
IC5501
RGB DRIVE
(4-90)
IC5502
TIMING GENERATOR
(4-90)
Q5601
(4-91) IC5601
CN5701
HD OUT
PANEL COM
VR,VG,VB
CN5502 FOR ADJUSTMENTS
VR,VG,VB
COM
DA
VCOM
VGLAC
CN5501
LCD901
2.5 INCH LCD UNIT
ND901 BACKLIGHT
BL HIGH
BL LOW
CN5604
T5601 Q5602
INVERTER
BACK LIGHT DRIVE
BL REG
(4-91)
IC5602
CURRENT DET
BL DET
PANEL 2.8V


(TRV530)
PD-139 BOARD(1/2)
PANEL R
PANEL G
PANEL B
XCS LCD
HI SO,XHI SCK
PANEL XHD
PANEL XVD
BL CONT
TO OVERALL BLOCK (3/5) (VC-254) (SEE PAGE 3-5)
IC5501
RGB DRIVE
(4-95)
IC5502
TIMING GENERATOR
(4-95)
Q5601
(4-97) IC5601
CN5701
HD OUT
PSIG
VR,VG,VB
CN5502 FOR ADJUSTMENTS
VR,VG,VB
VP
DA
PSIG
CN5501
LCD901
3 INCH LCD UNIT
ND901 BACKLIGHT
BL HIGH
BL LOW
CN5604
T5601 Q5602
INVERTER
BACK LIGHT DRIVE
BL REG
(4-97)
IC5602
CURRENT DET
BL DET
PANEL 2.8V

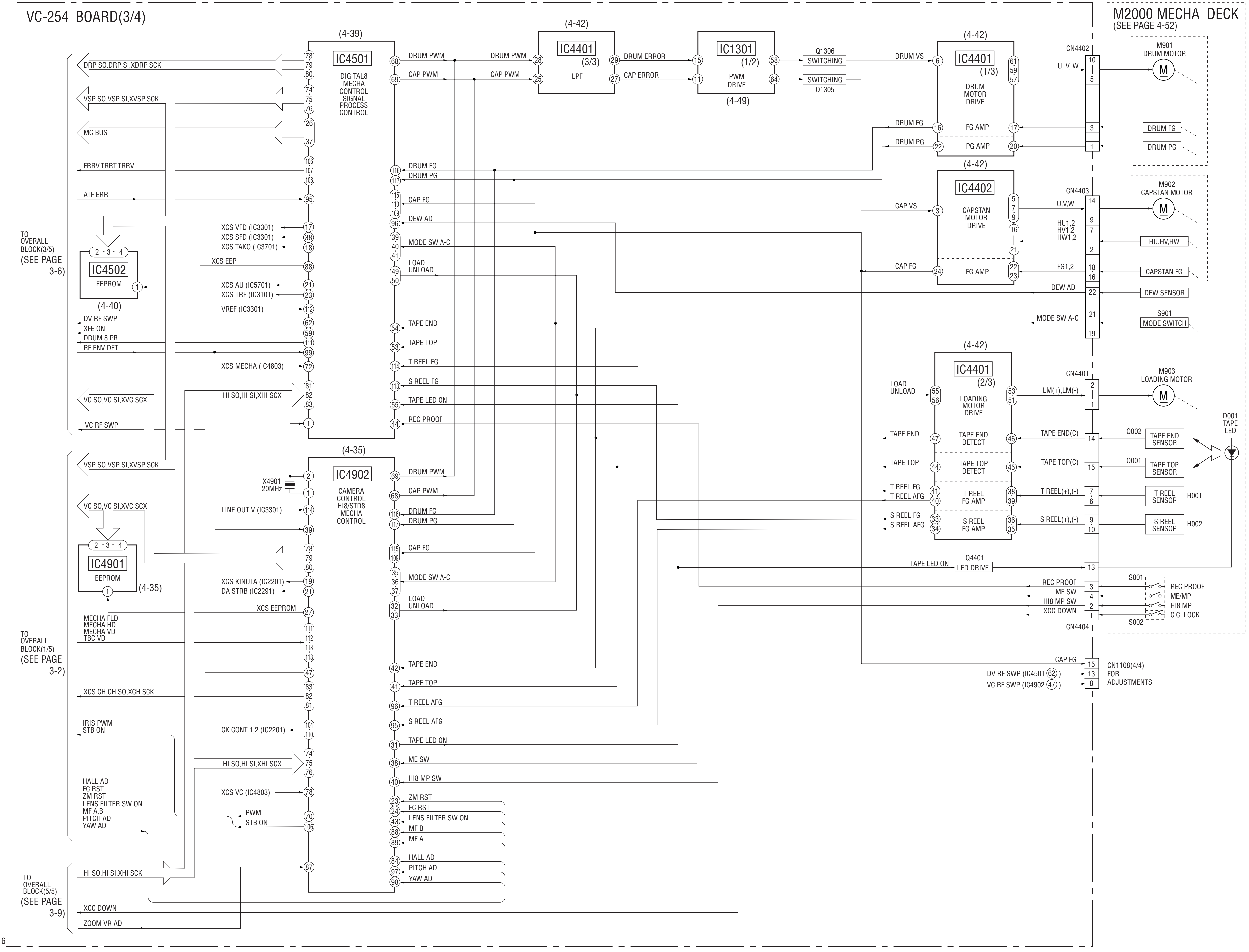
3-3. OVERALL BLOCK DIAGRAM (3/5)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


VC-254 BOARD(2/4)
IC3301 (4-21) (CAIN) DV SIGNAL PROCESS
X3301 24.576MHz
IC3303 (4-23) (LIP) DV INTERFACE
IC3302 CHARACTER GENERATOR (4-23)
IC3201 (4-31) HI8/STD8 PB RF AMP
IC3202 (4-31) RF ENV DET
IC2291 (4-37) D/A CONV. (EVR)
ADJUSTMENT VOLTAGE
IC3101 (4-25) (TRF) EQ A/D CONV. PLL
IC3103 (4-26) (TRW) REC/PB AMP
IC3102 (4-25)
Q3107 Q3109 Q3119,3120 FILTER SW
Q3117 Q3111,3116 FLYING ERASE OSC
CN3101
DRUM ODD EVEN FLYING ERASE
(SEE PAGE 4-26)
CN202 DV IN/OUT
CN1114
FP-272(1/2) (FLEXIBLE) (SEE PAGE 4-24)
TPA+,- TPB+,-
MC BUS
RF MON
PB RF (IC3201 ⑭)
CN1108(2/4) FOR ADJUSTMENTS
Y0-Y7
C0-C3
HD, VD, OE
C4-C7
ADAI2 ADAO2 SFD BCK
TO OVERALL BLOCK(2/5) (PC-082) (SEE PAGE 3-3)
(TRV330/TRV530)
(TRV230)
L BUS
TRCK LCK VREF
PRRV,TRRV,TRRT
DATA TO SFD DATA FROM SFD SFD BCK
REC CK REC DT
AD DT
PB CK ATF ERR
PB Y OUT
DV PB RF
IR FCS
AFCK (IC2603) SPCK (IC1505)
HD VD
COL0 COL3
MC BUS
VSP SO, SI, SCK
XCS SFD (IC4501) XCS VFD (IC4501)
PANEL G PANEL R PANEL B
PANEL XHD,XVD
Y C
BW Y
XCS TRF (IC4501)
XFE ON
DRUM 8PB
VC RF SWP
DV RF SWP
ATF ERR
ERRV,TRRV,TRRT
DRP SO,XDRP SCK
MC BUS
VSP SO,VSP SI,XVSP SCK
VC SO,VC SI,XVC SCK
RF ENV DET
TO OVERALL BLOCK (4/5) (SEE PAGE 3-7)
TO OVERALL BLOCK(1/5) (SEE PAGE 3-2)
RF AGC OUT(PB Y RF)
PB C RF
PB RF(PB AFM RF)
CAIN Y CAIN C
SP+,-
DV PB RF
PB RF
DOP (IC2201)
CN1104
TO OVERALL BLOCK(2/5) (PC-082) (SEE PAGE 3-3)
VSP SO, VSP SI, XVSP SCK
XCS HONEY (IC4501)
XCS LCD (IC4803)
TO OVERALL BLOCK(2/5) (PD-138/139) (SEE PAGE 3-4)
HI SO, XHI SCK
PANEL XHD,XVD
BL CONT
CN1120
VC SO,VC SI,XVC SCK
DA STB(IC4902)
XCS OSD OSD SO XOSD SCK
HI SO, XHI SCK
BL CONT
TO OVERALL BLOCK (5/5) (SEE PAGE 3-10)
BW Y
XCS EVF (IC4803)
HI SO,XHI SCK
PANEL XHD PANEL XVD
SP+,-
CN1117 CN102
EVF VR EVF VG ECF VB VCO
CN1108(3/4) FOR ADJUSTMENTS
CF-079 BOARD(1/2)(TRV230/TRV330)
CF-080 BOARD(1/2)(TRV530)
IC201 RGB DRIVE (4-77)
VR,VG,VB
LED DA
IC202 TIMING GENERATOR (4-77)
HD OUT
CN201 CN101
LB-068 BOARD(TRV230/TRV330)
LB-070 BOARD(TRV530)
CN701 CN702
LCD903 B/W LCD UNIT
IC701 (4-85) LED DRIVE
D701 (BACK LIGHT)
SP901 SPEAKER

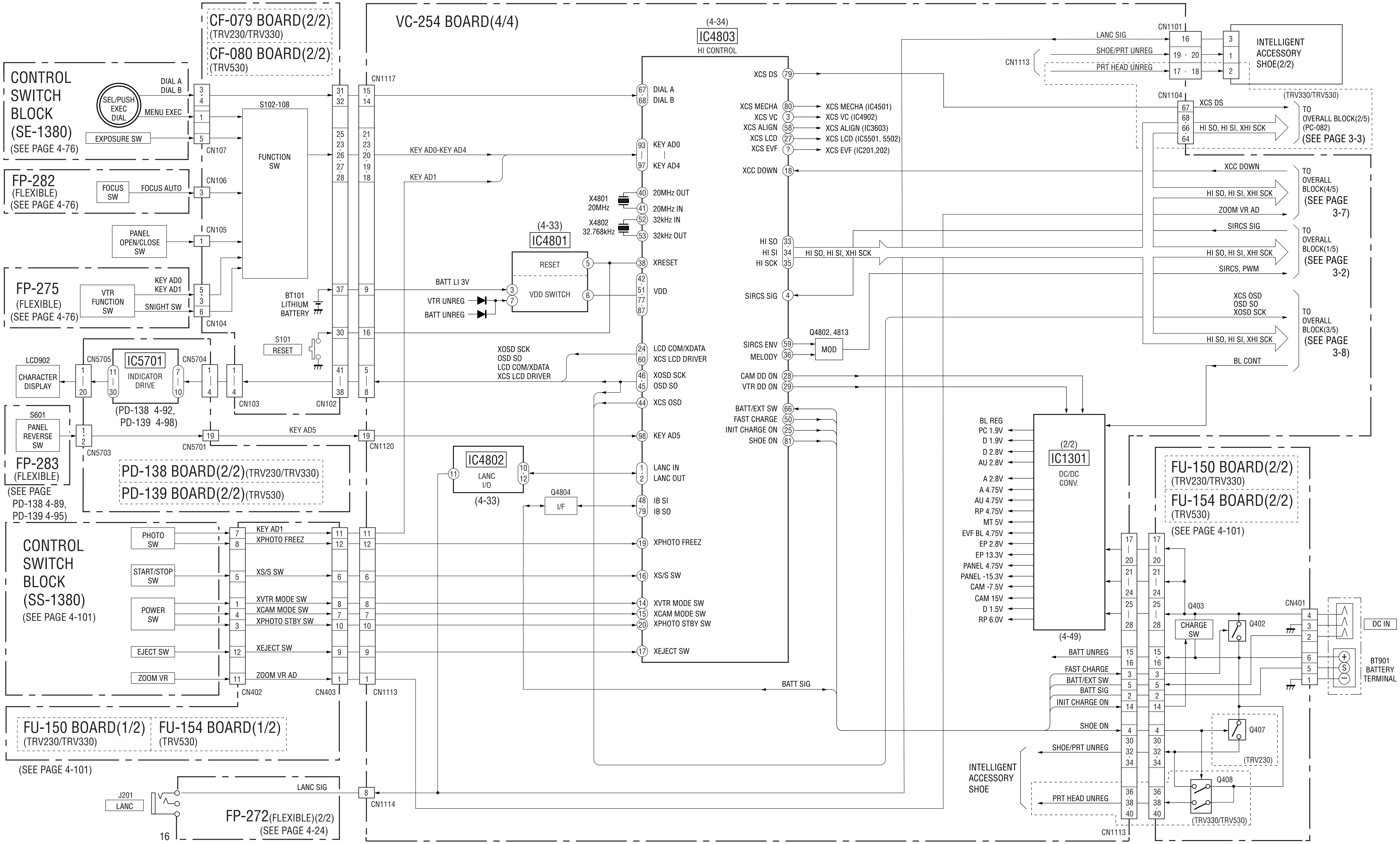
3-4. OVERALL BLOCK DIAGRAM (4/5)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


VC-254 BOARD(3/4)
M2000 MECHA DECK
(SEE PAGE 4-52)
IC4501
(4-39)
DIGITAL8 MECHA CONTROL SIGNAL PROCESS CONTROL
IC4902
(4-35)
CAMERA CONTROL HI8/STD8 MECHA CONTROL
IC4401 (3/3)
(4-42)
LPF
IC1301 (1/2)
PWM DRIVE
(4-49)
IC4401 (1/3)
DRUM MOTOR DRIVE
FG AMP
PG AMP
IC4402
CAPSTAN MOTOR DRIVE
IC4401 (2/3)
LOADING MOTOR DRIVE
TAPE END DETECT
TAPE TOP DETECT
T REEL FG AMP
S REEL FG AMP
IC4502
EEPROM
(4-40)
IC4901
EEPROM
(4-35)
Q1306 SWITCHING
Q1305 SWITCHING
Q4401 LED DRIVE
X4901 20MHz
DRP SO,DRP SI,XDRP SCK
VSP SO,VSP SI,XVSP SCK
MC BUS
FRRV,TRRT,TRRV
ATF ERR
VC SO,VC SI,XVC SCK
VC RF SWP
DV RF SWP
XFE ON
DRUM 8 PB
RF ENV DET
XCS VFD (IC3301)
XCS SFD (IC3301)
XCS TAKO (IC3701)
XCS EEP
XCS AU (IC5701)
XCS TRF (IC3101)
VREF (IC3301)
XCS MECHA (IC4803)
HI SO,HI SI,XHI SCK
LINE OUT V (IC3301)
XCS KINUTA (IC2201)
DA STRB (IC2291)
XCS EEPROM
MECHA FLD
MECHA HD
MECHA VD
TBC VD
XCS CH,CH SO,XCH SCK
IRIS PWM
STB ON
CK CONT 1,2 (IC2201)
HALL AD
FC RST
ZM RST
LENS FILTER SW ON
MF A,B
PITCH AD
YAW AD
XCS VC (IC4803)
PWM
XCC DOWN
ZOOM VR AD
TO OVERALL BLOCK(3/5) (SEE PAGE 3-6)
TO OVERALL BLOCK(1/5) (SEE PAGE 3-2)
TO OVERALL BLOCK(5/5) (SEE PAGE 3-9)
DRUM PWM
CAP PWM
DRUM FG
DRUM PG
CAP FG
DEW AD
MODE SW A-C
LOAD
UNLOAD
TAPE END
TAPE TOP
T REEL FG
S REEL FG
TAPE LED ON
REC PROOF
T REEL AFG
S REEL AFG
ME SW
HI8 MP SW
MF B
MF A
DRUM ERROR
CAP ERROR
DRUM VS
CAP VS
U, V, W
U,V,W
HU1,2
HV1,2
HW1,2
FG1,2
LM(+),LM(-)
TAPE END(C)
TAPE TOP(C)
T REEL(+),(-)
S REEL(+),(-)
CN4402
CN4403
CN4401
CN4404
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
M903 LOADING MOTOR
M
DRUM FG
DRUM PG
HU,HV,HW
CAPSTAN FG
DEW SENSOR
S901 MODE SWITCH
D001 TAPE LED
Q002 TAPE END SENSOR
Q001 TAPE TOP SENSOR
T REEL SENSOR H001
S REEL SENSOR H002
S001
S002
REC PROOF
ME/MP
HI8 MP
C.C. LOCK
ME SW
HI8 MP SW
XCC DOWN
CN1108(4/4) FOR ADJUSTMENTS
DV RF SWP (IC4501 (62))
VC RF SWP (IC4902 (47))
16

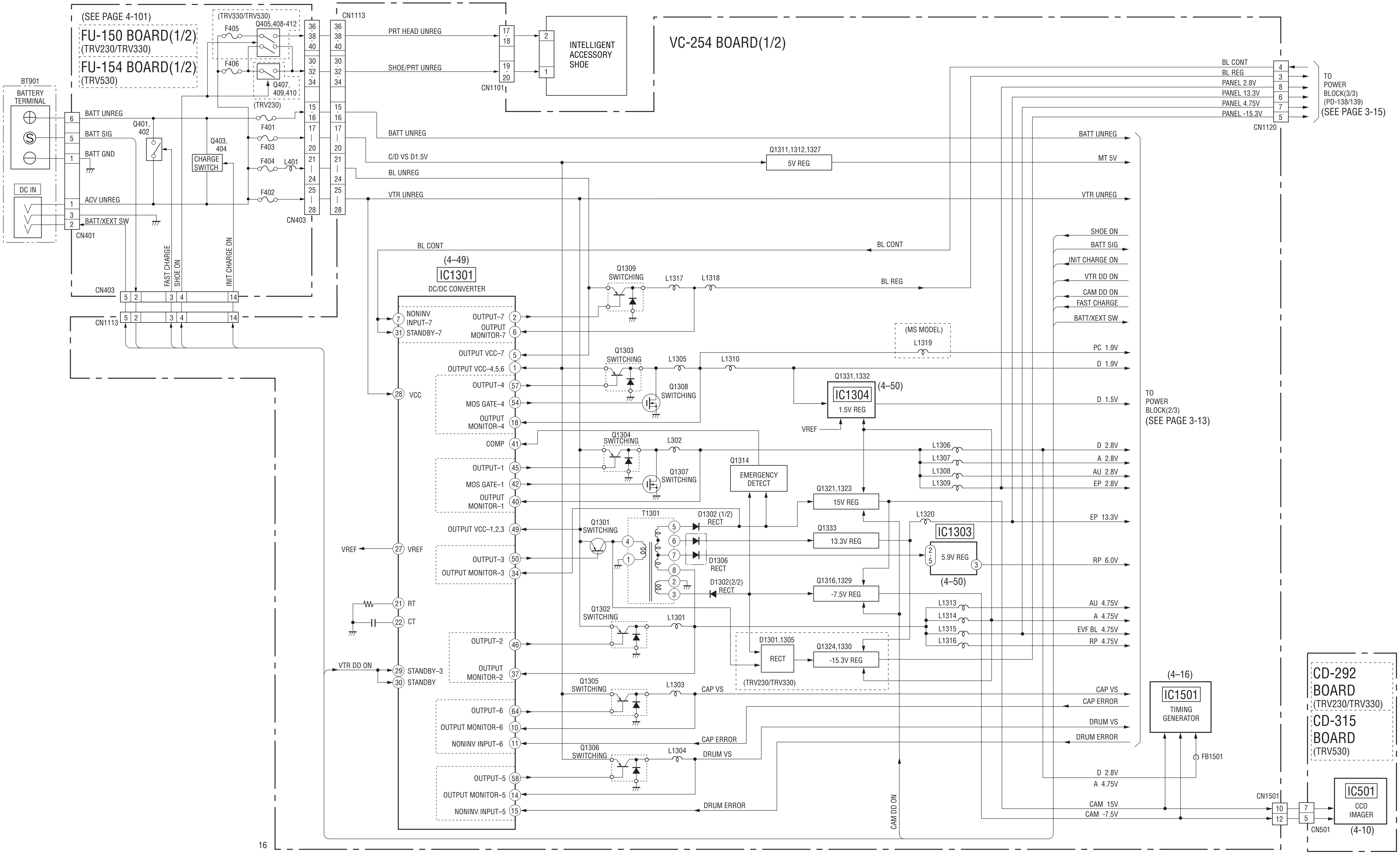
3-5. OVERALL BLOCK DIAGRAM (5/5)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


CF-079 BOARD(2/2) (TRV230/TRV330)
CF-080 BOARD(2/2) (TRV530)
VC-254 BOARD(4/4)
CONTROL SWITCH BLOCK (SE-1380) (SEE PAGE 4-76)
SEL/PUSH EXEC DIAL
DIAL A
DIAL B
MENU EXEC
EXPOSURE SW
CN107
S102-108
FUNCTION SW
FP-282 (FLEXIBLE) (SEE PAGE 4-76)
FOCUS SW
FOCUS AUTO
CN106
PANEL OPEN/CLOSE SW
CN105
FP-275 (FLEXIBLE) (SEE PAGE 4-76)
VTR FUNCTION SW
KEY AD0
KEY AD1
SNIGHT SW
CN104
BT101 LITHIUM BATTERY
S101 RESET
LCD902
CHARACTER DISPLAY
CN5705
IC5701 INDICATOR DRIVE
CN5704
CN103
CN102
(PD-138 4-92, PD-139 4-98)
S601 PANEL REVERSE SW
CN5703
CN5701
FP-283 (FLEXIBLE) (SEE PAGE PD-138 4-89, PD-139 4-95)
PD-138 BOARD(2/2)(TRV230/TRV330)
PD-139 BOARD(2/2)(TRV530)
CONTROL SWITCH BLOCK (SS-1380) (SEE PAGE 4-101)
PHOTO SW
START/STOP SW
POWER SW
EJECT SW
ZOOM VR
KEY AD1
XPHOTO FREEZ
XS/S SW
XVTR MODE SW
XCAM MODE SW
XPHOTO STBY SW
XEJECT SW
ZOOM VR AD
CN402
CN403
CN1113
FU-150 BOARD(1/2) (TRV230/TRV330)
FU-154 BOARD(1/2) (TRV530)
(SEE PAGE 4-101)
J201 LANC
LANC SIG
CN1114
FP-272(FLEXIBLE)(2/2) (SEE PAGE 4-24)
CN1117
CN1120
KEY AD0-KEY AD4
KEY AD5
BATT LI 3V
VTR UNREG
BATT UNREG
(4-33) IC4801
RESET
VDD SWITCH
X4801 20MHz
X4802 32.768kHz
XOSD SCK
OSD SO
LCD COM/XDATA
XCS LCD DRIVER
IC4802 LANC I/O (4-33)
Q4804 I/F
(4-34) IC4803 HI CONTROL
DIAL A
DIAL B
KEY AD0 | KEY AD4
20MHz OUT
20MHz IN
32kHz IN
32kHz OUT
XRESET
VDD
LCD COM/XDATA
XCS LCD DRIVER
XOSD SCK
OSD SO
XCS OSD
KEY AD5
LANC IN
LANC OUT
IB SI
IB SO
XPHOTO FREEZ
XS/S SW
XVTR MODE SW
XCAM MODE SW
XPHOTO STBY SW
XEJECT SW
XCS DS
XCS MECHA
XCS VC
XCS ALIGN
XCS LCD
XCS EVF
XCC DOWN
HI SO
HI SI
HI SCK
SIRCS SIG
SIRCS ENV
MELODY
CAM DD ON
VTR DD ON
BATT/EXT SW
FAST CHARGE
INIT CHARGE ON
SHOE ON
XCS MECHA (IC4501)
XCS VC (IC4902)
XCS ALIGN (IC3603)
XCS LCD (IC5501, 5502)
XCS EVF (IC201,202)
HI SO, HI SI, XHI SCK
Q4802, 4813 MOD
BATT SIG
LANC SIG
SHOE/PRT UNREG
PRT HEAD UNREG
CN1101
CN1113
CN1104
INTELLIGENT ACCESSORY SHOE(2/2)
(TRV330/TRV530)
XCS DS
TO OVERALL BLOCK(2/5) (PC-082) (SEE PAGE 3-3)
XCC DOWN
HI SO, HI SI, XHI SCK
ZOOM VR AD
TO OVERALL BLOCK(4/5) (SEE PAGE 3-7)
SIRCS SIG
SIRCS, PWM
TO OVERALL BLOCK(1/5) (SEE PAGE 3-2)
XCS OSD
OSD SO
XOSD SCK
TO OVERALL BLOCK(3/5) (SEE PAGE 3-8)
BL CONT
(2/2) IC1301 DC/DC CONV. (4-49)
BL REG
PC 1.9V
D 1.9V
D 2.8V
AU 2.8V
A 2.8V
A 4.75V
AU 4.75V
RP 4.75V
MT 5V
EVF BL 4.75V
EP 2.8V
EP 13.3V
PANEL 4.75V
PANEL -15.3V
CAM -7.5V
CAM 15V
D 1.5V
RP 6.0V
FU-150 BOARD(2/2) (TRV230/TRV330)
FU-154 BOARD(2/2) (TRV530)
(SEE PAGE 4-101)
Q403
CHARGE SW
Q402
CN401
DC IN
BT901 BATTERY TERMINAL
BATT UNREG
FAST CHARGE
BATT/EXT SW
BATT SIG
INIT CHARGE ON
SHOE ON
SHOE/PRT UNREG
PRT HEAD UNREG
Q407
(TRV230)
Q408
(TRV330/TRV530)
INTELLIGENT ACCESSORY SHOE
CN1113

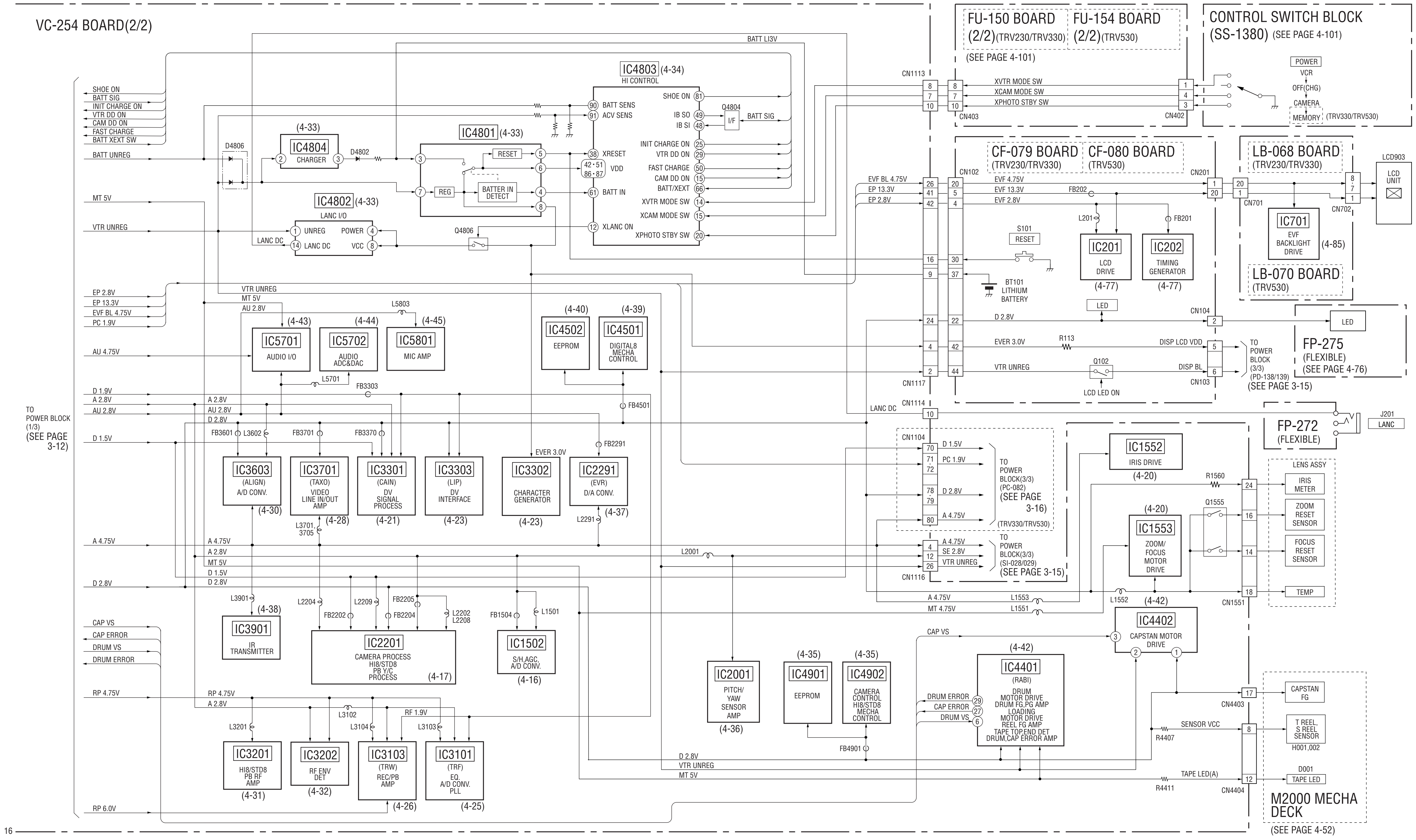
3-6. POWER BLOCK DIAGRAM (1/3)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


(SEE PAGE 4-101)
FU-150 BOARD(1/2)
(TRV230/TRV330)
FU-154 BOARD(1/2)
(TRV530)
BT901
BATTERY TERMINAL
DC IN
BATT UNREG
BATT SIG
BATT GND
ACV UNREG
BATT/XEXT SW
CN401
Q401, 402
Q403, 404
CHARGE SWITCH
(TRV330/TRV530)
F405
Q405,408-412
F406
Q407, 409,410
(TRV230)
F401
F403
F404
L401
F402
CN403
FAST CHARGE
SHOE ON
INIT CHARGE ON
CN1113
PRT HEAD UNREG
SHOE/PRT UNREG
CN1101
INTELLIGENT ACCESSORY SHOE
VC-254 BOARD(1/2)
BL CONT
BL REG
PANEL 2.8V
PANEL 13.3V
PANEL 4.75V
PANEL -15.3V
CN1120
TO POWER BLOCK(3/3) (PD-138/139)
(SEE PAGE 3-15)
BATT UNREG
C/D VS D1.5V
BL UNREG
VTR UNREG
Q1311,1312,1327
5V REG
MT 5V
SHOE ON
BATT SIG
INIT CHARGE ON
VTR DD ON
CAM DD ON
FAST CHARGE
BATT/XEXT SW
(4–49)
IC1301
DC/DC CONVERTER
NONINV INPUT–7
STANDBY–7
OUTPUT–7
OUTPUT MONITOR–7
OUTPUT VCC–7
OUTPUT VCC–4,5,6
OUTPUT–4
MOS GATE–4
OUTPUT MONITOR–4
COMP
OUTPUT–1
MOS GATE–1
OUTPUT MONITOR–1
OUTPUT VCC–1,2,3
OUTPUT–3
OUTPUT MONITOR–3
VCC
VREF
RT
CT
VTR DD ON
STANDBY–3
STANDBY
OUTPUT–2
OUTPUT MONITOR–2
OUTPUT–6
OUTPUT MONITOR–6
NONINV INPUT–6
OUTPUT–5
OUTPUT MONITOR–5
NONINV INPUT–5
Q1309 SWITCHING
L1317
L1318
Q1303 SWITCHING
L1305
L1310
Q1308 SWITCHING
(MS MODEL)
L1319
PC 1.9V
D 1.9V
Q1331,1332
IC1304
1.5V REG
(4–50)
D 1.5V
VREF
TO POWER BLOCK(2/3)
(SEE PAGE 3-13)
Q1304 SWITCHING
L302
Q1307 SWITCHING
Q1314
EMERGENCY DETECT
L1306
L1307
L1308
L1309
D 2.8V
A 2.8V
AU 2.8V
EP 2.8V
Q1321,1323
15V REG
T1301
Q1301 SWITCHING
D1302 (1/2) RECT
D1306 RECT
D1302(2/2) RECT
Q1333
13.3V REG
L1320
IC1303
5.9V REG
(4–50)
EP 13.3V
RP 6.0V
Q1316,1329
-7.5V REG
Q1302 SWITCHING
L1301
L1313
L1314
L1315
L1316
AU 4.75V
A 4.75V
EVF BL 4.75V
RP 4.75V
D1301,1305
RECT
Q1324,1330
-15.3V REG
(TRV230/TRV330)
Q1305 SWITCHING
L1303
CAP VS
CAP ERROR
Q1306 SWITCHING
L1304
DRUM VS
DRUM ERROR
CAM DD ON
(4–16)
IC1501
TIMING GENERATOR
CAP VS
CAP ERROR
DRUM VS
DRUM ERROR
FB1501
D 2.8V
A 4.75V
CAM 15V
CAM -7.5V
CN1501
CN501
CD-292 BOARD
(TRV230/TRV330)
CD-315 BOARD
(TRV530)
IC501
CCD IMAGER
(4-10)
16

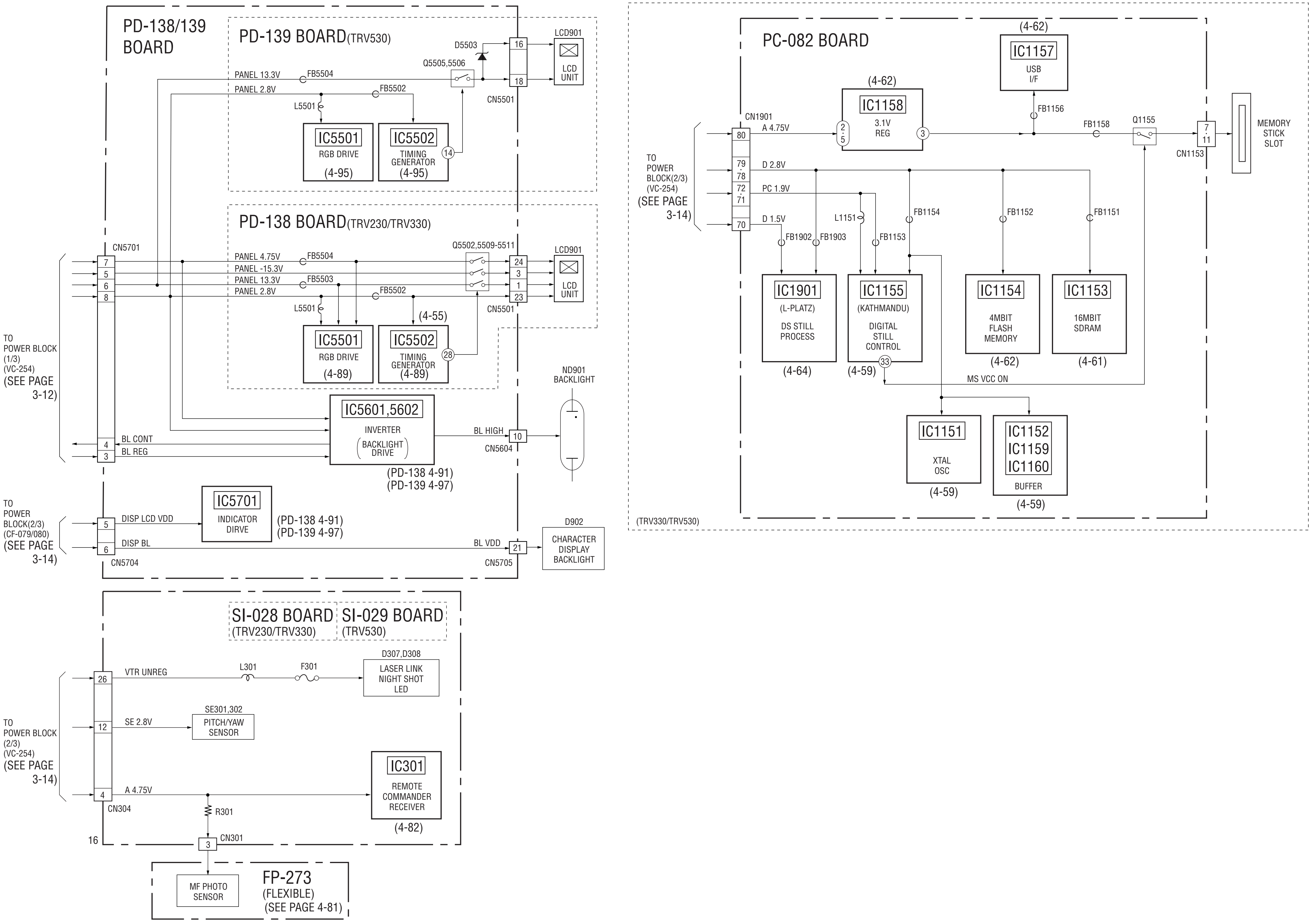
3-7. POWER BLOCK DIAGRAM (2/3)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.


VC-254 BOARD(2/2)
IC4803 (4-34) HI CONTROL
IC4801 (4-33)
IC4804 (4-33) CHARGER
IC4802 (4-33) LANC I/O
D4806
D4802
Q4804 I/F
Q4806
RESET
REG
BATTER IN DETECT
BATT SENS
ACV SENS
XRESET
VDD
BATT IN
XLANC ON
SHOE ON
IB SO
IB SI
INIT CHARGE ON
VTR DD ON
FAST CHARGE
CAM DD ON
BATT/XEXT
XVTR MODE SW
XCAM MODE SW
XPHOTO STBY SW
BATT SIG
BATT LI3V
SHOE ON
BATT SIG
INIT CHARGE ON
VTR DD ON
CAM DD ON
FAST CHARGE
BATT XEXT SW
BATT UNREG
MT 5V
VTR UNREG
LANC DC
EP 2.8V
EP 13.3V
EVF BL 4.75V
PC 1.9V
AU 4.75V
D 1.9V
A 2.8V
AU 2.8V
D 1.5V
A 4.75V
D 2.8V
CAP VS
CAP ERROR
DRUM VS
DRUM ERROR
RP 4.75V
RP 6.0V
TO POWER BLOCK (1/3) (SEE PAGE 3-12)
IC5701 (4-43) AUDIO I/O
IC5702 (4-44) AUDIO ADC&DAC
IC5801 (4-45) MIC AMP
L5803
L5701
FB3303
IC4502 (4-40) EEPROM
IC4501 (4-39) DIGITAL8 MECHA CONTROL
FB4501
IC3603 (ALIGN) A/D CONV. (4-30)
IC3701 (TAXO) VIDEO LINE IN/OUT AMP (4-28)
IC3301 (CAIN) DV SIGNAL PROCESS (4-21)
IC3303 (LIP) DV INTERFACE (4-23)
IC3302 CHARACTER GENERATOR (4-23)
IC2291 (EVR) D/A CONV. (4-37)
EVER 3.0V
FB3601
L3602
FB3701
FB3370
FB2291
L3701, 3705
L2291
IC3901 IR TRANSMITTER (4-38)
L3901
IC2201 CAMERA PROCESS HI8/STD8 PB Y/C PROCESS (4-17)
L2204
FB2202
L2209
FB2205
FB2204
L2202 L2208
IC1502 S/H,AGC, A/D CONV. (4-16)
FB1504
L1501
L2001
IC3201 HI8/STD8 PB RF AMP (4-31)
IC3202 RF ENV DET (4-32)
IC3103 (TRW) REC/PB AMP (4-26)
IC3101 (TRF) EQ. A/D CONV. PLL (4-25)
L3201
L3102
L3104
L3103
RF 1.9V
IC2001 PITCH/YAW SENSOR AMP (4-36)
IC4901 (4-35) EEPROM
IC4902 (4-35) CAMERA CONTROL HI8/STD8 MECHA CONTROL
FB4901
IC4401 (4-42) (RABI) DRUM MOTOR DRIVE DRUM FG,PG AMP LOADING MOTOR DRIVE REEL FG AMP TAPE TOP,END DET DRUM,CAP ERROR AMP
IC4402 (4-42) CAPSTAN MOTOR DRIVE
IC1552 IRIS DRIVE (4-20)
IC1553 (4-20) ZOOM/FOCUS MOTOR DRIVE
R1560
Q1555
L1552
L1553
L1551
A 4.75V
MT 4.75V
SENSOR VCC
R4407
TAPE LED(A)
R4411
CN4403
CN4404
CN1551
LENS ASSY
IRIS METER
ZOOM RESET SENSOR
FOCUS RESET SENSOR
TEMP
CAPSTAN FG
T REEL, S REEL SENSOR H001,002
D001 TAPE LED
M2000 MECHA DECK (SEE PAGE 4-52)
CN1113
CN1117
CN1114
CN1104
CN1116
FU-150 BOARD (2/2)(TRV230/TRV330)
FU-154 BOARD (2/2)(TRV530)
(SEE PAGE 4-101)
CN403
CN402
XVTR MODE SW
XCAM MODE SW
XPHOTO STBY SW
CONTROL SWITCH BLOCK (SS-1380) (SEE PAGE 4-101)
POWER
VCR
OFF(CHG)
CAMERA
MEMORY (TRV330/TRV530)
CF-079 BOARD (TRV230/TRV330)
CF-080 BOARD (TRV530)
CN102
CN201
CN104
CN103
EVF BL 4.75V
EP 13.3V
EP 2.8V
EVF 4.75V
EVF 13.3V
EVF 2.8V
FB202
FB201
L201
IC201 LCD DRIVE (4-77)
IC202 TIMING GENERATOR (4-77)
S101 RESET
BT101 LITHIUM BATTERY
LED
D 2.8V
EVER 3.0V
R113
DISP LCD VDD
VTR UNREG
Q102
DISP BL
LCD LED ON
TO POWER BLOCK (3/3) (PD-138/139) (SEE PAGE 3-15)
LB-068 BOARD (TRV230/TRV330)
LB-070 BOARD (TRV530)
CN701
CN702
IC701 EVF BACKLIGHT DRIVE (4-85)
LCD903
LCD UNIT
FP-275 (FLEXIBLE) (SEE PAGE 4-76)
LED
LANC DC
FP-272 (FLEXIBLE)
J201 LANC
D 1.5V
PC 1.9V
D 2.8V
A 4.75V
TO POWER BLOCK(3/3) (PC-082) (SEE PAGE 3-16) (TRV330/TRV530)
A 4.75V
SE 2.8V
VTR UNREG
TO POWER BLOCK(3/3) (SI-028/029) (SEE PAGE 3-15)
16

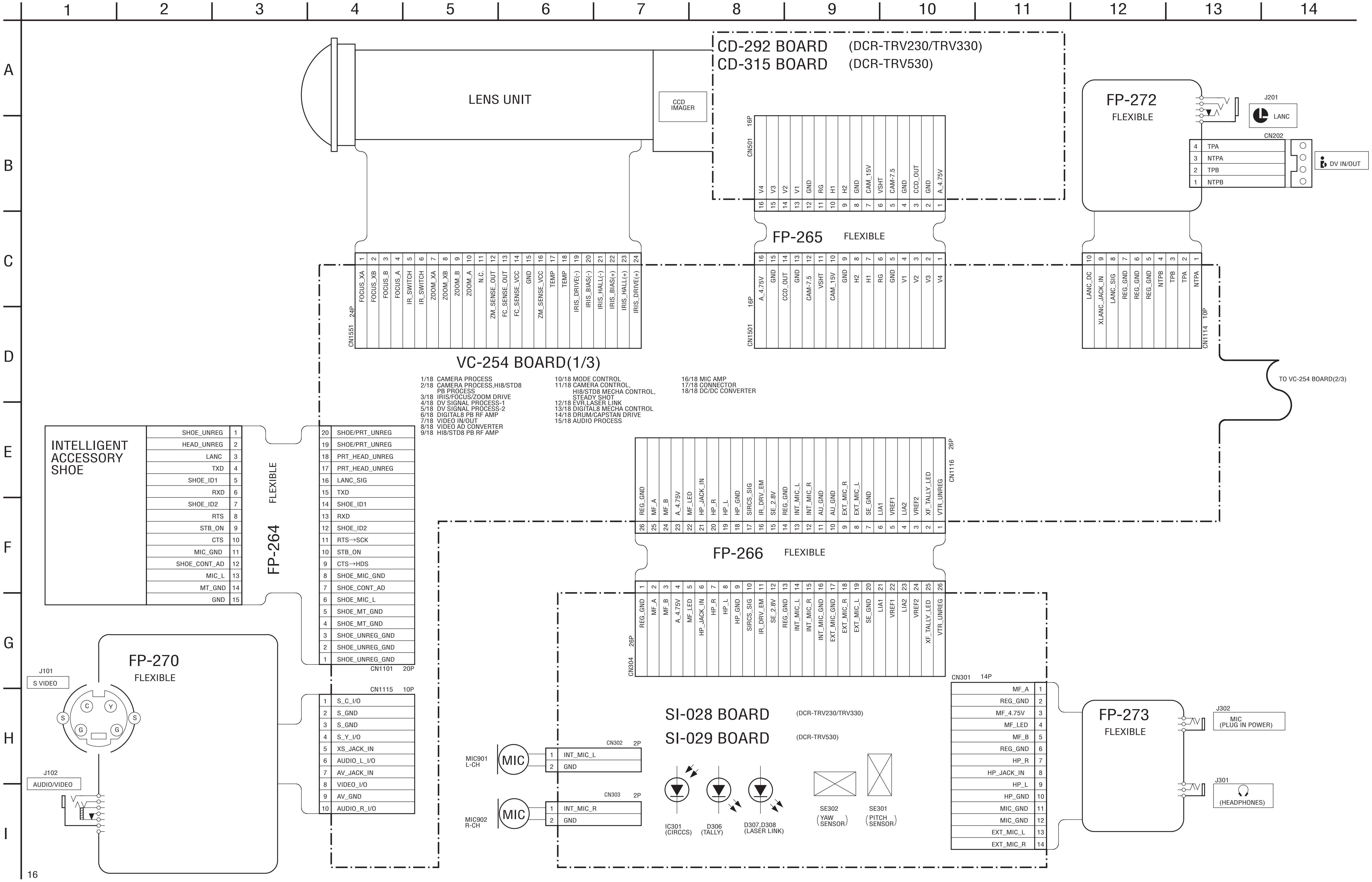
3-8. POWER BLOCK DIAGRAM (3/3)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

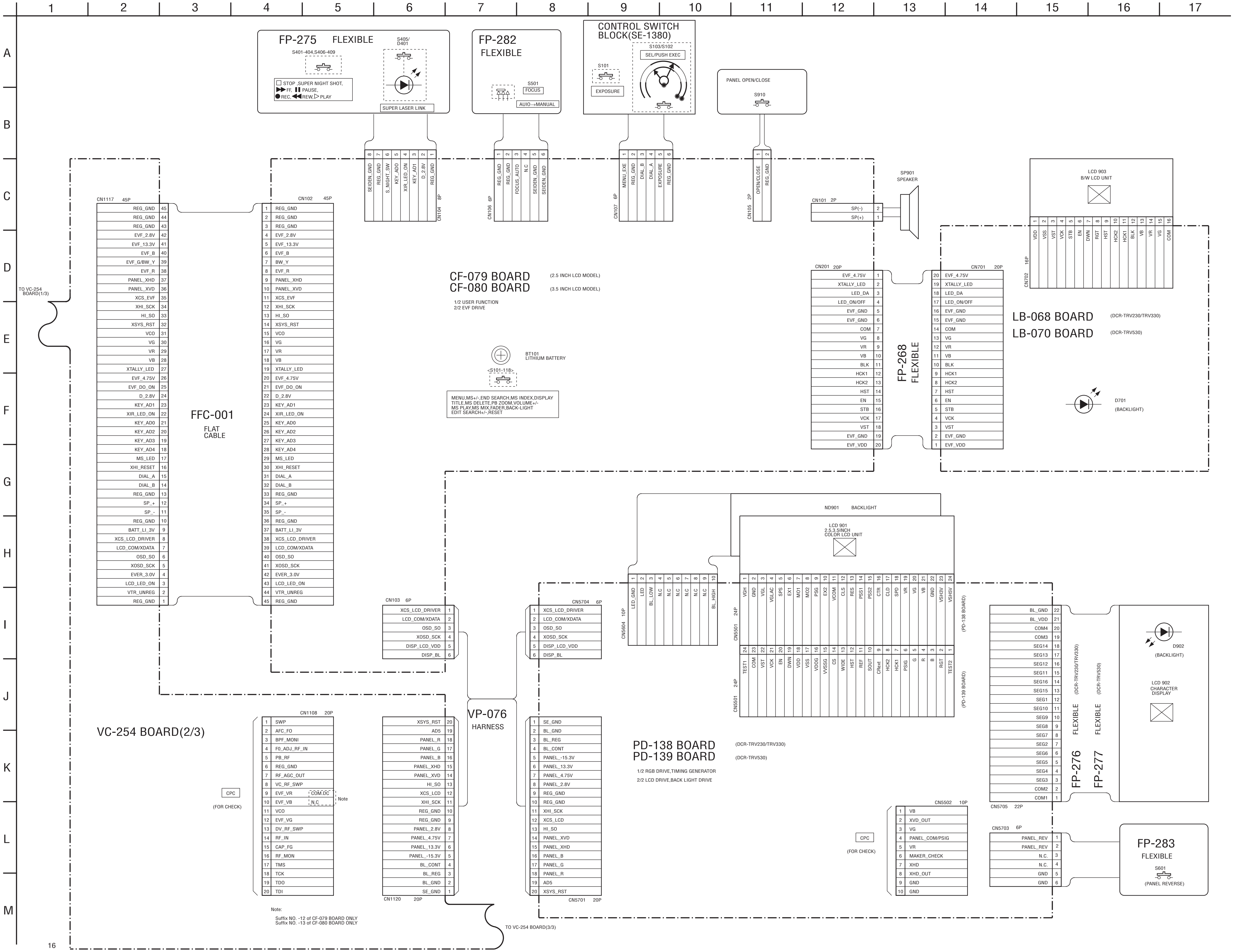

PD-138/139 BOARD
PD-139 BOARD(TRV530)
D5503
Q5505,5506
PANEL 13.3V
FB5504
PANEL 2.8V
FB5502
L5501
16
18
CN5501
LCD901
LCD UNIT
IC5501
RGB DRIVE
(4-95)
IC5502
TIMING GENERATOR
14
(4-95)
PD-138 BOARD(TRV230/TRV330)
CN5701
PANEL 4.75V
FB5504
PANEL -15.3V
PANEL 13.3V
FB5503
PANEL 2.8V
FB5502
Q5502,5509-5511
24
3
1
23
LCD901
LCD UNIT
CN5501
7
5
6
8
L5501
(4-55)
IC5501
RGB DRIVE
(4-89)
IC5502
TIMING GENERATOR
28
(4-89)
TO POWER BLOCK (1/3) (VC-254)
(SEE PAGE 3-12)
ND901 BACKLIGHT
IC5601,5602
INVERTER
(BACKLIGHT DRIVE)
BL HIGH
10
CN5604
4
3
BL CONT
BL REG
(PD-138 4-91)
(PD-139 4-97)
TO POWER BLOCK(2/3) (CF-079/080)
(SEE PAGE 3-14)
5
6
DISP LCD VDD
DISP BL
IC5701
INDICATOR DIRVE
(PD-138 4-91)
(PD-139 4-97)
CN5704
BL VDD
21
CN5705
D902
CHARACTER DISPLAY BACKLIGHT
SI-028 BOARD (TRV230/TRV330)
SI-029 BOARD (TRV530)
TO POWER BLOCK (2/3) (VC-254)
(SEE PAGE 3-14)
26
VTR UNREG
L301
F301
D307,D308
LASER LINK NIGHT SHOT LED
12
SE 2.8V
SE301,302
PITCH/YAW SENSOR
4
A 4.75V
CN304
R301
IC301
REMOTE COMMANDER RECEIVER
(4-82)
16
3
CN301
MF PHOTO SENSOR
FP-273 (FLEXIBLE)
(SEE PAGE 4-81)
PC-082 BOARD
(4-62)
IC1157
USB I/F
(4-62)
IC1158
3.1V REG
2
5
3
FB1156
FB1158
Q1155
CN1901
A 4.75V
80
7
11
CN1153
MEMORY STICK SLOT
TO POWER BLOCK(2/3) (VC-254)
(SEE PAGE 3-14)
79
78
72
71
70
D 2.8V
PC 1.9V
D 1.5V
L1151
FB1154
FB1152
FB1151
FB1902
FB1903
FB1153
IC1901
(L-PLATZ)
DS STILL PROCESS
(4-64)
IC1155
(KATHMANDU)
DIGITAL STILL CONTROL
33
(4-59)
IC1154
4MBIT FLASH MEMORY
(4-62)
IC1153
16MBIT SDRAM
(4-61)
MS VCC ON
IC1151
XTAL OSC
(4-59)
IC1152
IC1159
IC1160
BUFFER
(4-59)
(TRV330/TRV530)

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/3)

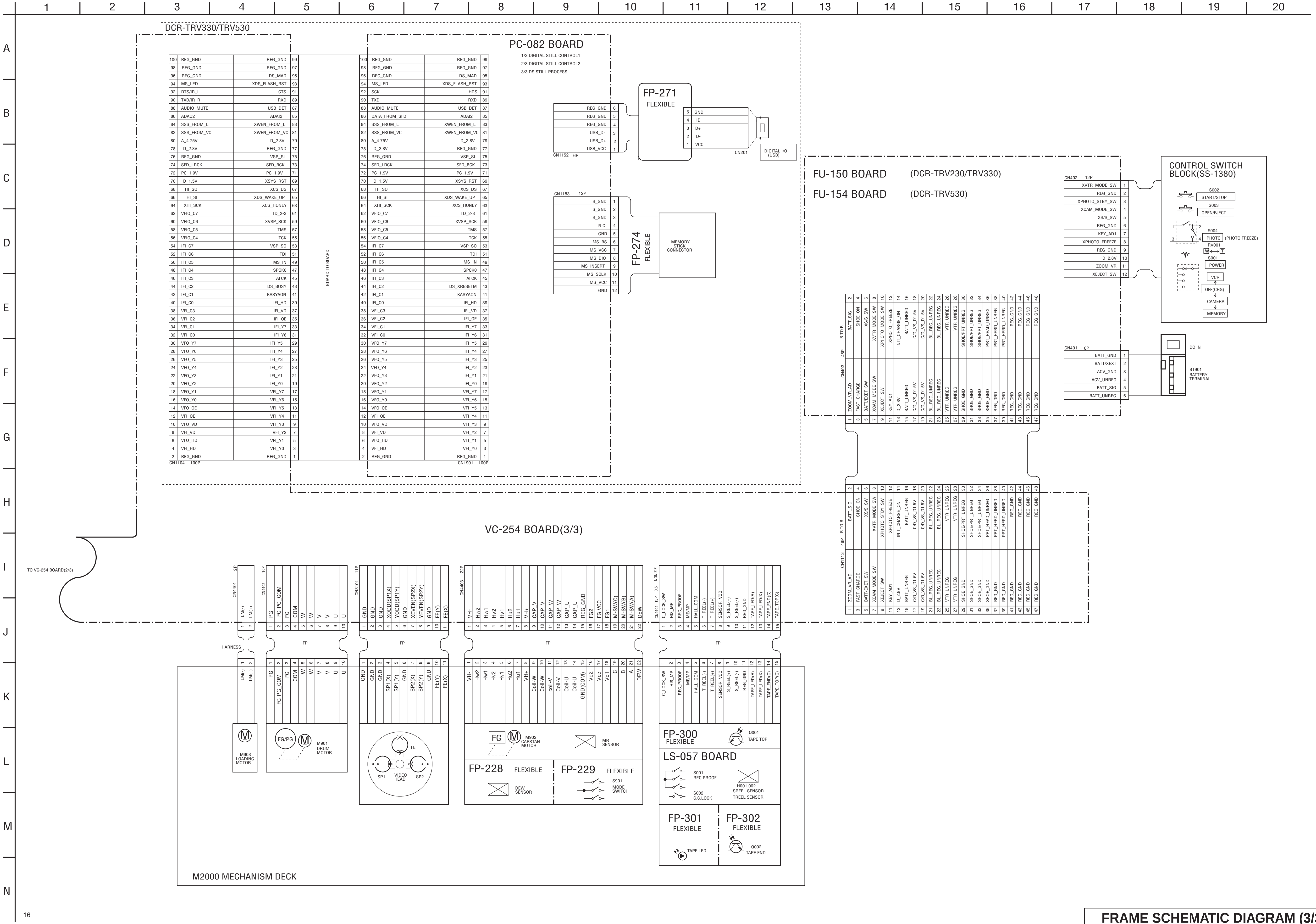

1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
LENS UNIT
CCD IMAGER
CD-292 BOARD (DCR-TRV230/TRV330)
CD-315 BOARD (DCR-TRV530)
CN501 16P
16 V4
15 V3
14 V2
13 V1
12 GND
11 RG
10 H1
9 H2
8 GND
7 CAM_15V
6 VSHT
5 CAM-7.5
4 GND
3 CCD_OUT
2 GND
1 A_4.75V
FP-265 FLEXIBLE
FP-272 FLEXIBLE
J201 LANC
CN202
4 TPA
3 NTPA
2 TPB
1 NTPB
DV IN/OUT
CN1551 24P
1 FOCUS_XA
2 FOCUS_XB
3 FOCUS_B
4 FOCUS_A
5 IR_SWITCH
6 IR_SWITCH
7 ZOOM_XA
8 ZOOM_XB
9 ZOOM_B
10 ZOOM_A
11 N.C.
12 ZM_SENSE_OUT
13 FC_SENSE_OUT
14 FC_SENSE_VCC
15 GND
16 ZM_SENSE_VCC
17 TEMP
18 TEMP
19 IRIS_DRIVE(-)
20 IRIS_BIAS(-)
21 IRIS_HALL(-)
22 IRIS_BIAS(+)
23 IRIS_HALL(+)
24 IRIS_DRIVE(+)
CN1501 16P
16 A_4.75V
15 CCD_OUT
14 GND
13 CAM-7.5
12 VSHT
11 CAM_15V
10 GND
9 H2
8 H1
7 RG
6 GND
5 V1
4 V2
3 V3
2 V4
CN1114 10P
10 LANC_DC
9 XLANC_JACK_IN
8 LANC_SIG
7 REG_GND
6 REG_GND
5 REG_GND
4 NTPB
3 TPB
2 TPA
1 NTPA
TO VC-254 BOARD(2/3)
VC-254 BOARD(1/3)
1/18 CAMERA PROCESS
2/18 CAMERA PROCESS,HI8/STD8 PB PROCESS
3/18 IRIS/FOCUS/ZOOM DRIVE
4/18 DV SIGNAL PROCESS-1
5/18 DV SIGNAL PROCESS-2
6/18 DIGITAL8 PB RF AMP
7/18 VIDEO IN/OUT
8/18 VIDEO AD CONVERTER
9/18 HI8/STD8 PB RF AMP
10/18 MODE CONTROL
11/18 CAMERA CONTROL, HI8/STD8 MECHA CONTROL, STEADY SHOT
12/18 EVR,LASER LINK
13/18 DIGITAL8 MECHA CONTROL
14/18 DRUM/CAPSTAN DRIVE
15/18 AUDIO PROCESS
16/18 MIC AMP
17/18 CONNECTOR
18/18 DC/DC CONVERTER
INTELLIGENT ACCESSORY SHOE
SHOE_UNREG 1
HEAD_UNREG 2
LANC 3
TXD 4
SHOE_ID1 5
RXD 6
SHOE_ID2 7
RTS 8
STB_ON 9
CTS 10
MIC_GND 11
SHOE_CONT_AD 12
MIC_L 13
MT_GND 14
GND 15
FP-264 FLEXIBLE
20 SHOE/PRT_UNREG
19 SHOE/PRT_UNREG
18 PRT_HEAD_UNREG
17 PRT_HEAD_UNREG
16 LANC_SIG
15 TXD
14 SHOE_ID1
13 RXD
12 SHOE_ID2
11 RTS→SCK
10 STB_ON
9 CTS→HDS
8 SHOE_MIC_GND
7 SHOE_CONT_AD
6 SHOE_MIC_L
5 SHOE_MT_GND
4 SHOE_MT_GND
3 SHOE_UNREG_GND
2 SHOE_UNREG_GND
1 SHOE_UNREG_GND
CN1101 20P
CN1116 26P
26 REG_GND
25 MF_A
24 MF_B
23 A_4.75V
22 MF_LED
21 HP_JACK_IN
20 HP_R
19 HP_L
18 HP_GND
17 SIRCS_SIG
16 IR_DRV_EM
15 SE_2.8V
14 REG_GND
13 INT_MIC_L
12 INT_MIC_R
11 AU_GND
10 AU_GND
9 EXT_MIC_R
8 EXT_MIC_L
7 SE_GND
6 LIA1
5 VREF1
4 LIA2
3 VREF2
2 XF_TALLY_LED
1 VTR_UNREG
FP-266 FLEXIBLE
CN304 26P
1 REG_GND
2 MF_A
3 MF_B
4 A_4.75V
5 MF_LED
6 HP_JACK_IN
7 HP_R
8 HP_L
9 HP_GND
10 SIRCS_SIG
11 IR_DRV_EM
12 SE_2.8V
13 REG_GND
14 INT_MIC_L
15 INT_MIC_R
16 INT_MIC_GND
17 EXT_MIC_GND
18 EXT_MIC_R
19 EXT_MIC_L
20 SE_GND
21 LIA1
22 VREF1
23 LIA2
24 VREF2
25 XF_TALLY_LED
26 VTR_UNREG
FP-270 FLEXIBLE
J101 S VIDEO
C Y S S G G
J102 AUDIO/VIDEO
CN1115 10P
1 S_C_I/O
2 S_GND
3 S_GND
4 S_Y_I/O
5 XS_JACK_IN
6 AUDIO_L_I/O
7 AV_JACK_IN
8 VIDEO_I/O
9 AV_GND
10 AUDIO_R_I/O
MIC901 L-CH
MIC
CN302 2P
1 INT_MIC_L
2 GND
MIC902 R-CH
MIC
CN303 2P
1 INT_MIC_R
2 GND
SI-028 BOARD (DCR-TRV230/TRV330)
SI-029 BOARD (DCR-TRV530)
IC301 (CIRCCS)
D306 (TALLY)
D307,D308 (LASER LINK)
SE302 (YAW SENSOR)
SE301 (PITCH SENSOR)
CN301 14P
MF_A 1
REG_GND 2
MF_4.75V 3
MF_LED 4
MF_B 5
REG_GND 6
HP_R 7
HP_JACK_IN 8
HP_L 9
HP_GND 10
MIC_GND 11
MIC_GND 12
EXT_MIC_L 13
EXT_MIC_R 14
FP-273 FLEXIBLE
J302 MIC (PLUG IN POWER)
J301 (HEADPHONES)
16

FRAME SCHEMATIC DIAGRAM (2/3)


FP-275 FLEXIBLE
S401-404,S406-409
S405/D401
☐ STOP ,SUPER NIGHT SHOT, ▶▶FF, ❚❚ PAUSE, ● REC, ◀◀REW,▷ PLAY
SUPER LASER LINK
FP-282 FLEXIBLE
S501 FOCUS
AUTO↔MANUAL
CONTROL SWITCH BLOCK(SE-1380)
S101 EXPOSURE
S103/S102 SEL/PUSH EXEC
PANEL OPEN/CLOSE
S910
SP901 SPEAKER
LCD 903 B/W LCD UNIT
CN104 8P
CN106 6P
CN107 6P
CN105 2P
CN101 2P
CN1117 45P
CN102 45P
TO VC-254 BOARD(1/3)
FFC-001 FLAT CABLE
CF-079 BOARD (2.5 INCH LCD MODEL)
CF-080 BOARD (3.5 INCH LCD MODEL)
1/2 USER FUNCTION
2/2 EVF DRIVE
BT101 LITHIUM BATTERY
<S101-118>
MENU,MS+/-,END SEARCH,MS INDEX,DISPLAY TITLE,MS DELETE,PB ZOOM,VOLUME+/- MS PLAY,MS MIX,FADER,BACK-LIGHT EDIT SEARCH+/-,RESET
CN201 20P
CN701 20P
CN702 16P
FP-268 FLEXIBLE
LB-068 BOARD (DCR-TRV230/TRV330)
LB-070 BOARD (DCR-TRV530)
D701 (BACKLIGHT)
ND901 BACKLIGHT
LCD 901 2.5,3.5INCH COLOR LCD UNIT
CN5604 10P
CN5501 24P
(PD-138 BOARD)
(PD-139 BOARD)
CN103 6P
CN5704 6P
VP-076 HARNESS
VC-254 BOARD(2/3)
CN1108 20P
CN1120 20P
CN5701 20P
CPC (FOR CHECK)
COM,OC N.C Note
PD-138 BOARD (DCR-TRV230/TRV330)
PD-139 BOARD (DCR-TRV530)
1/2 RGB DRIVE,TIMING GENERATOR
2/2 LCD DRIVE,BACK LIGHT DRIVE
CN5502 10P
CN5705 22P
CN5703 6P
FP-276 FLEXIBLE (DCR-TRV230/TRV330)
FP-277 FLEXIBLE (DCR-TRV530)
D902 (BACKLIGHT)
LCD 902 CHARACTER DISPLAY
FP-283 FLEXIBLE
S601 (PANEL REVERSE)
Note:
Suffix NO. -12 of CF-079 BOARD ONLY
Suffix NO. -13 of CF-080 BOARD ONLY
TO VC-254 BOARD(3/3)
16

FRAME SCHEMATIC DIAGRAM (2/3)

FRAME SCHEMATIC DIAGRAM (3/3)

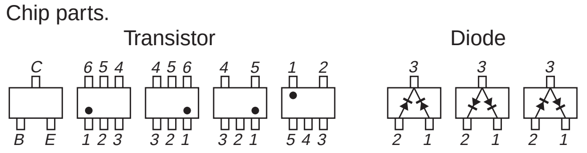

DCR-TRV330/TRV530
PC-082 BOARD
1/3 DIGITAL STILL CONTROL1
2/3 DIGITAL STILL CONTROL2
3/3 DS STILL PROCESS
CN1104 100P
CN1901 100P
BOARD TO BOARD
FP-271
FLEXIBLE
CN1152 6P
CN201
DIGITAL I/O (USB)
CN1153 12P
FP-274
FLEXIBLE
MEMORY STICK CONNECTOR
FU-150 BOARD (DCR-TRV230/TRV330)
FU-154 BOARD (DCR-TRV530)
CN403 48P B TO B
CN402 12P
CN401 6P
CONTROL SWITCH BLOCK(SS-1380)
S002 START/STOP
S003 OPEN/EJECT
S004 PHOTO (PHOTO FREEZE)
RV001
S001 POWER
VCR
OFF(CHG)
CAMERA
MEMORY
DC IN
BT901 BATTERY TERMINAL
VC-254 BOARD(3/3)
CN1113 48P B TO B
TO VC-254 BOARD(2/3)
CN4401 2P
CN4402 10P
CN3101 11P
CN4403 22P
CN4404 15P 0.5 NON ZIF
HARNESS
FP
M903 LOADING MOTOR
M901 DRUM MOTOR
FE
SP1
VIDEO HEAD
SP2
M902 CAPSTAN MOTOR
MR SENSOR
FP-228 FLEXIBLE
DEW SENSOR
FP-229 FLEXIBLE
S901 MODE SWITCH
FP-300 FLEXIBLE
Q001 TAPE TOP
LS-057 BOARD
S001 REC PROOF
S002 C.C.LOCK
H001,002 SREEL SENSOR TREEL SENSOR
FP-301 FLEXIBLE
TAPE LED
FP-302 FLEXIBLE
Q002 TAPE END
M2000 MECHANISM DECK

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

- ▒: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.



(For schematic diagrams)

- All capacitors are in mF unless otherwise noted. pF : m mF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted.
  kW=1000W, MW=1000kW.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example C541 L452
22U 10UH
TA A 2520

Kinds of capacitor

Temperature characteristics

External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- ⊟ : non flammable resistor
- ⊡ : fusible resistor
- ▭ : panel designation
- ━━ : B+ Line *
- ▬ ▬ ▬ : B– Line *
- ⇨ : IN/OUT direction of (+,–) B LINE. *
- ▭ : adjustment for repair. *
- Circled numbers refer to waveforms. *

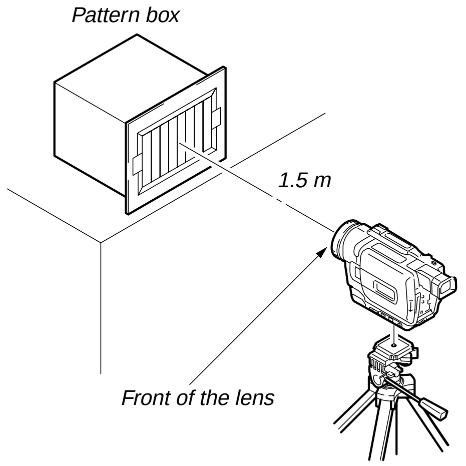
* Indicated by the color red.

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

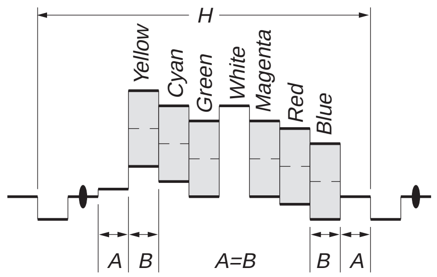


Fig. a (Video output terminal output waveform)

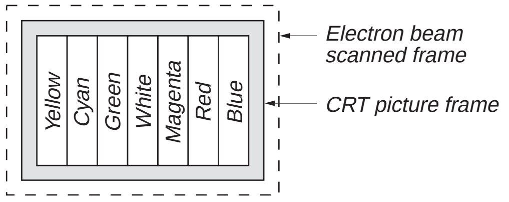
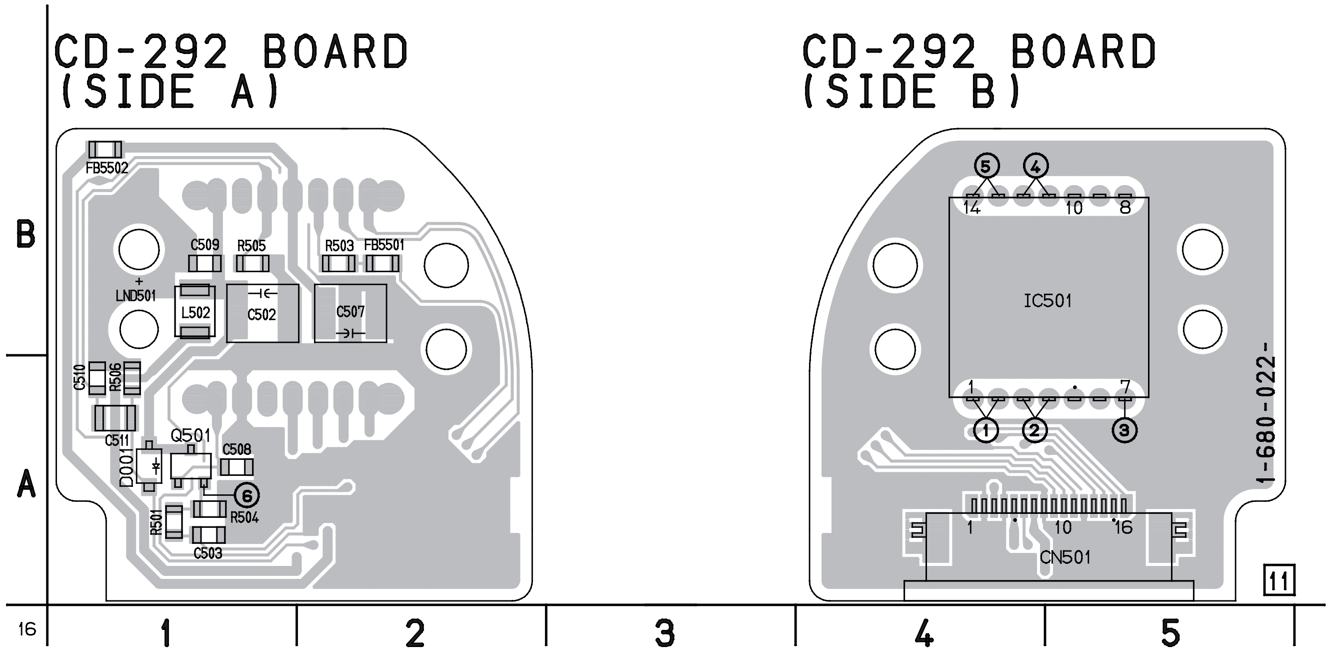


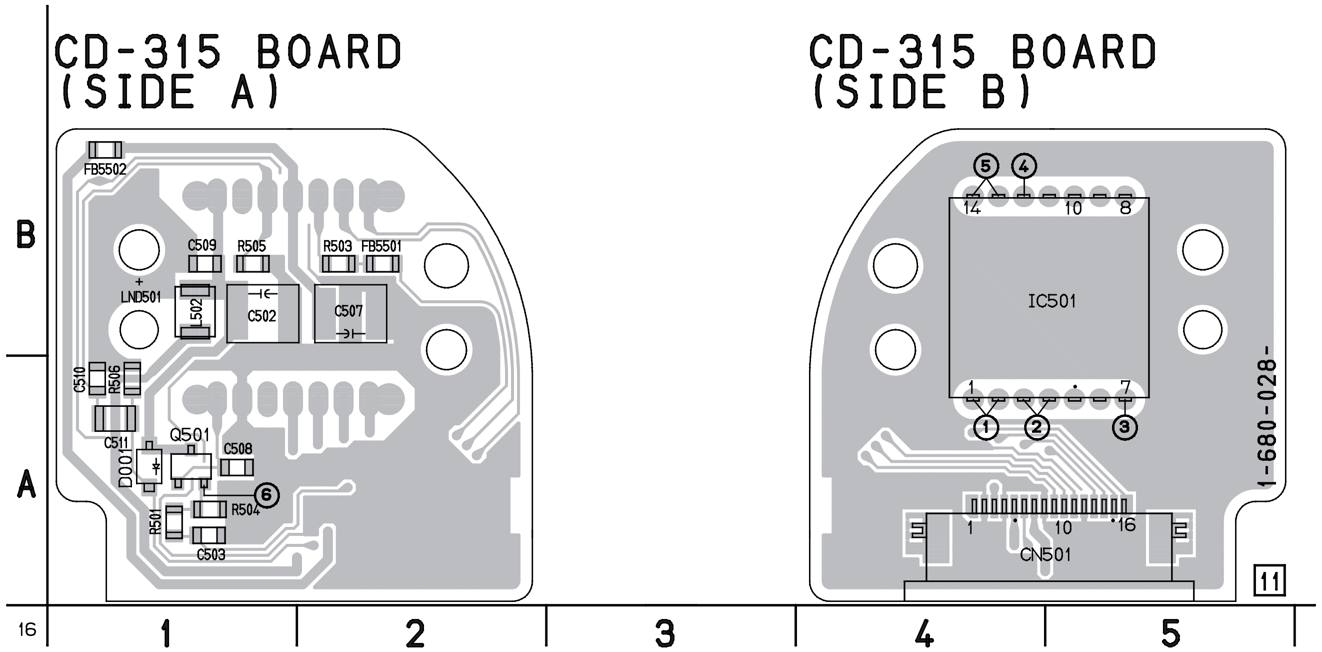
Fig.b (Picture on monitor TV)

When indicating parts by reference number, pleas include the board name.

CD-292 (CCD IMAGER) PRINTED WIRING BOARD (DCR-TRV230/TRV330)
CD-315 (CCD IMAGER) PRINTED WIRING BOARD (DCR-TRV530)

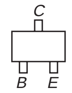
— Ref. No. CD-292, CD-315 Boards; 10,000 Series —


CD-292 BOARD
(SIDE A)
CD-292 BOARD
(SIDE B)
B
A
FB5502
C509
R505
R503
FB5501
LND501
L502
C502
C507
C510
R506
C511
Q501
C508
D001
R501
R504
C503
6
5
4
14
10
8
IC501
1
7
1
2
3
1
10
16
CN501
1-680-022-
11
16
1
2
3
4
5

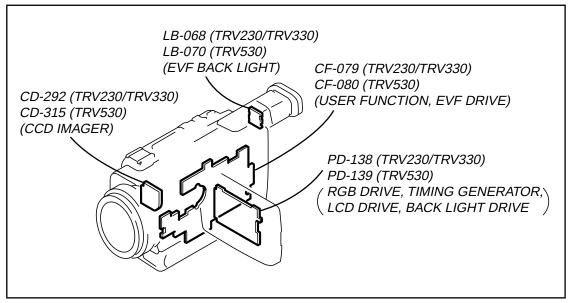

CD-315 BOARD
(SIDE A)
CD-315 BOARD
(SIDE B)
B
A
FB5502
C509
R505
R503
FB5501
LND501
L502
C502
C507
C510
R506
C511
Q501
C508
D001
R501
R504
C503
6
5
4
14
10
8
IC501
1
7
1
2
3
1
10
16
CN501
1-680-028-
11
16
1
2
3
4
5

For printed wiring boards
- Refer to page 4-107 for parts location.
- CD-292, CD-315 boards consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

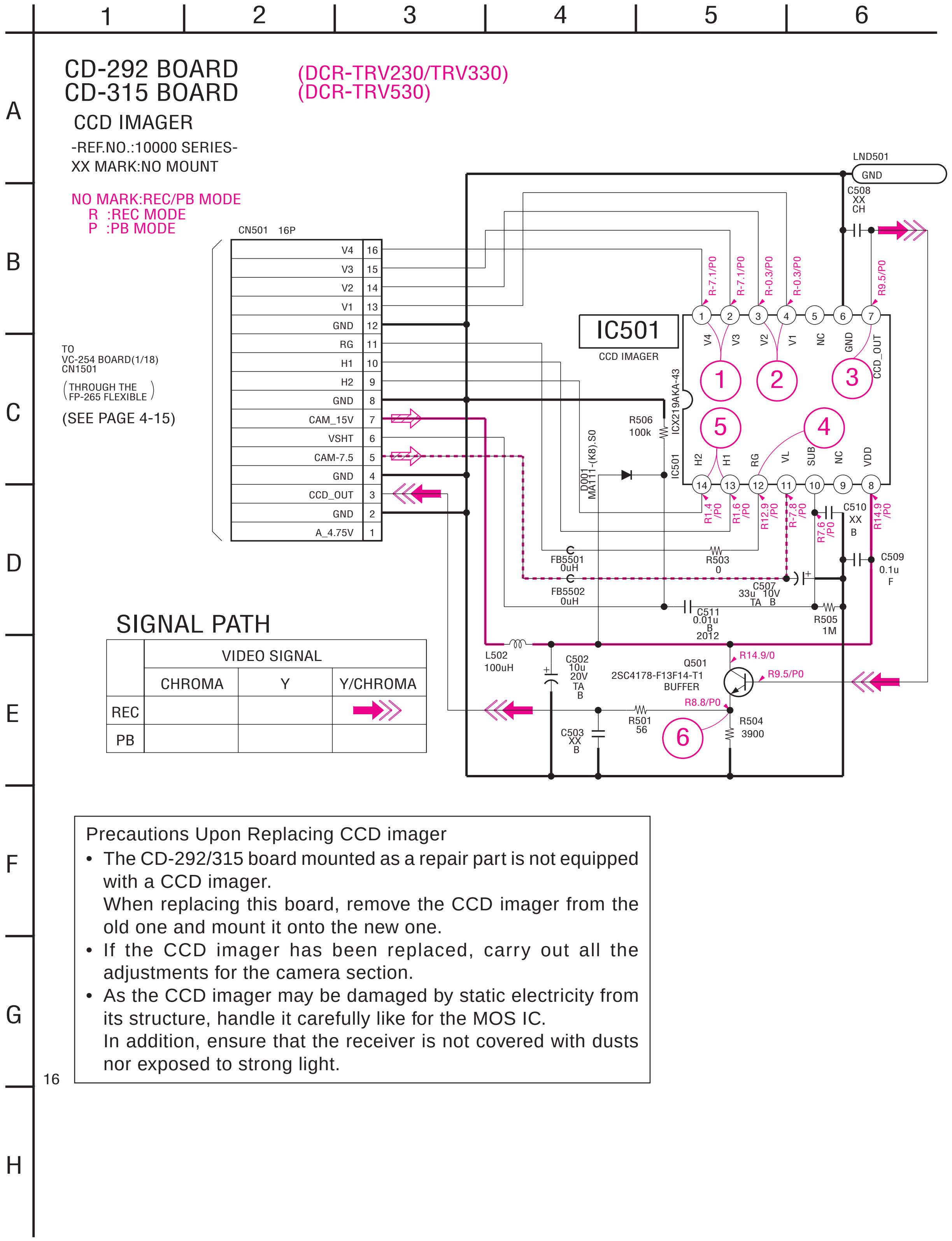
Transistor



There are a few cases that the part printed on this diagram isn't mounted in this model.


LB-068 (TRV230/TRV330)
LB-070 (TRV530)
(EVF BACK LIGHT)
CF-079 (TRV230/TRV330)
CF-080 (TRV530)
(USER FUNCTION, EVF DRIVE)
CD-292 (TRV230/TRV330)
CD-315 (TRV530)
(CCD IMAGER)
PD-138 (TRV230/TRV330)
PD-139 (TRV530)
(RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE)

For Schematic Diagram
- Refer to page 4-103 for waveforms.


1
2
3
4
5
6
A
B
C
D
E
F
G
H
CD-292 BOARD
CD-315 BOARD
(DCR-TRV230/TRV330)
(DCR-TRV530)
CCD IMAGER
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
CN501 16P
V4 16
V3 15
V2 14
V1 13
GND 12
RG 11
H1 10
H2 9
GND 8
CAM_15V 7
VSHT 6
CAM-7.5 5
GND 4
CCD_OUT 3
GND 2
A_4.75V 1
TO
VC-254 BOARD(1/18)
CN1501
(THROUGH THE FP-265 FLEXIBLE)
(SEE PAGE 4-15)
LND501
GND
C508
XX
CH
R-7.1/P0
R-7.1/P0
R-0.3/P0
R-0.3/P0
R9.5/P0
IC501
CCD IMAGER
ICX219AKA-43
IC501
V4
V3
V2
V1
NC
GND
CCD_OUT
H2
H1
RG
VL
SUB
NC
VDD
1
2
3
4
5
6
7
14
13
12
11
10
9
8
R506
100k
D001
MA111-(K8).S0
R1.4/P0
R1.6/P0
R12.9/P0
R-7.8/P0
R7.6/P0
R14.9/P0
C510
XX
B
C509
0.1u
F
FB5501
0uH
R503
0
FB5502
0uH
C507
33u 10V
TA B
C511
0.01u
B
2012
R505
1M
L502
100uH
C502
10u
20V
TA
B
Q501
2SC4178-F13F14-T1
BUFFER
R14.9/0
R9.5/P0
R8.8/P0
C503
XX
B
R501
56
R504
3900
6
16

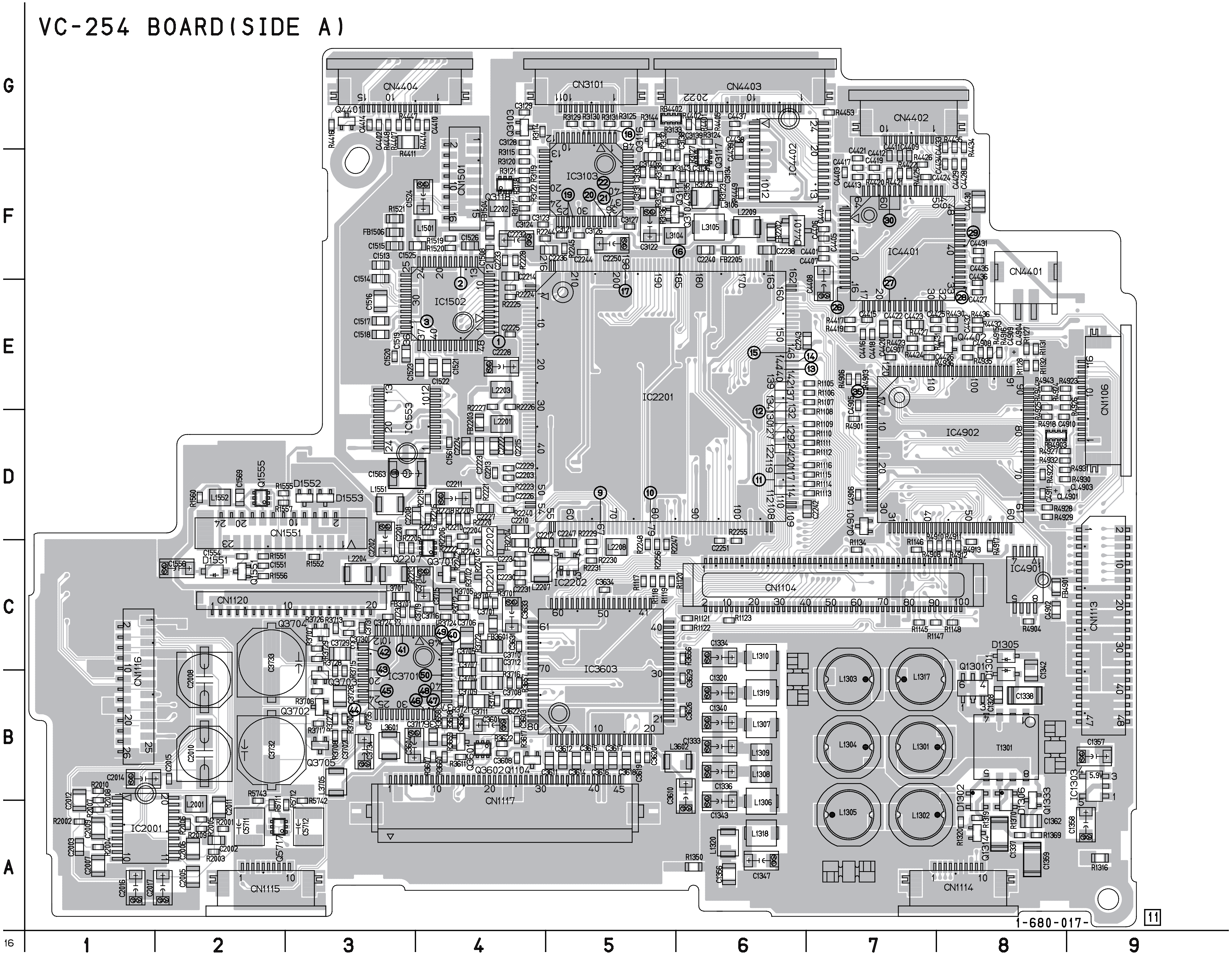
SIGNAL PATH

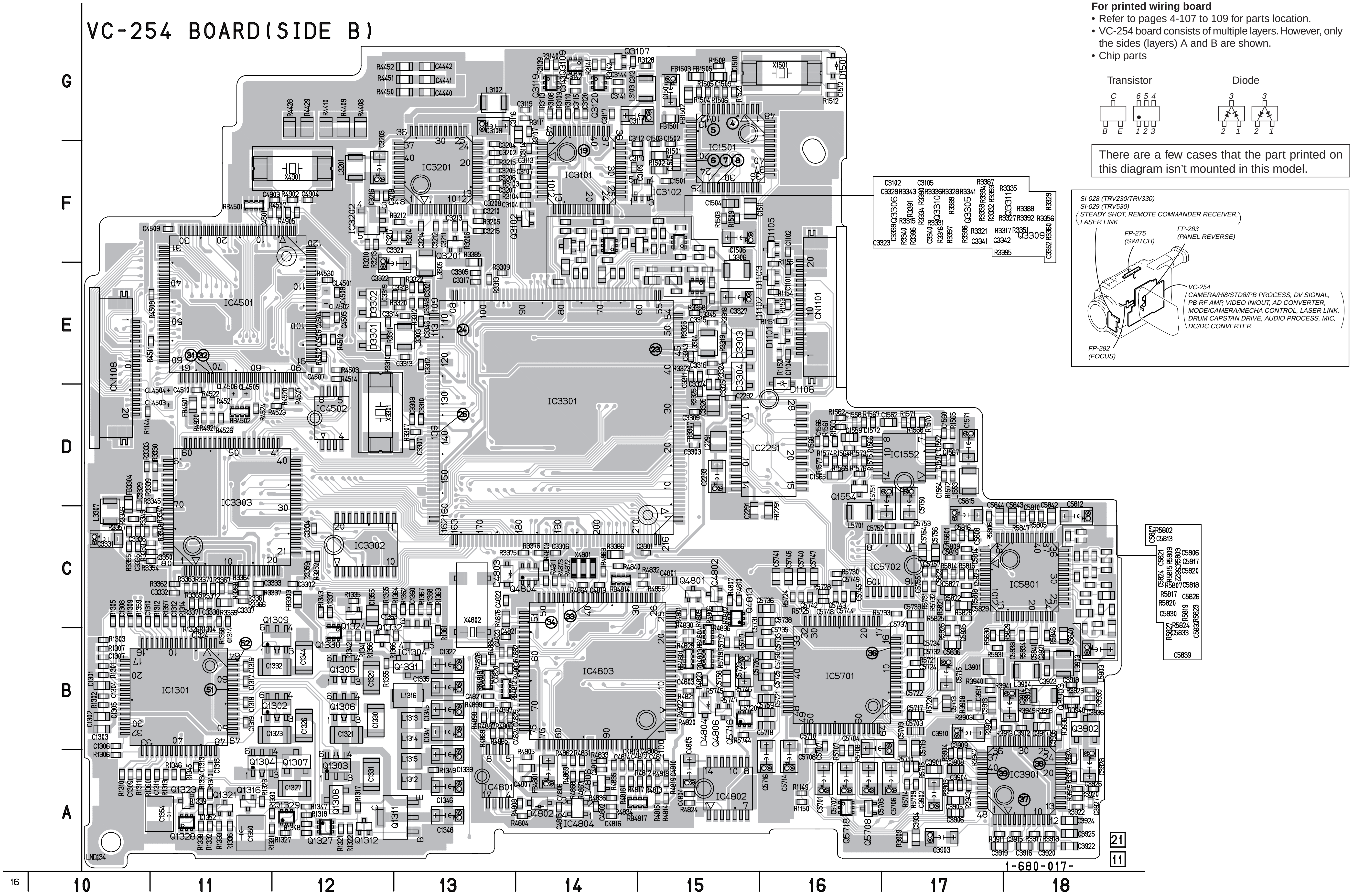
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			⇒
PB			

Precautions Upon Replacing CCD imager
- The CD-292/315 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

VC-254 (CAMERA/STD8/Hi8/PB PROCESS, DV SIGNAL, PB RF AMP, VIDEO IN/OUT, AD CONVERTER, MODE/CAMERA/MECHA CONTROL, LASER LINK, DRUM CAPSTAN DRIVE, AUDIO PROCESS, MIC, DC/DC CONVERTER) PRINTED WIRING BOARD

— Ref. No. VC-254 Board; 10,000 Series —


VC-254 BOARD(SIDE A)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
16
CN4404
CN3101
CN4403
CN4402
CN4401
IC3103
IC4402
IC4401
IC1502
IC1553
IC2201
IC4902
IC4901
IC2202
IC3603
IC3701
IC2001
IC1303
CN1501
CN1551
CN1120
CN1104
CN1106
CN1113
CN1116
CN1117
CN1115
CN1114
D1552
D1553
D1551
D1305
T1301
L1303
L1317
L1304
L1301
L1305
L1302
1-680-017-
11


VC-254 BOARD(SIDE B)
G
F
E
D
C
B
A
10
11
12
13
14
15
16
17
18
IC3201
IC3101
IC1501
IC3102
IC4501
IC3202
IC3301
IC4502
IC2291
IC1552
IC3303
IC3302
IC5702
IC5801
IC1301
IC1304
IC4803
IC5701
IC3901
IC4801
IC4802
IC4804
CN1108
CN1101
X4901
X1501
X3301
X4801
X4802
Q3107
Q3119
Q3109
Q3120
Q3102
Q3201
Q1554
Q4801
Q4802
Q4804
Q1309
Q1324
Q1332
Q1330
Q1305
Q1331
Q1302
Q1306
Q1304
Q1307
Q1303
Q1323
Q1321
Q1316
Q1329
Q1308
Q1311
Q1328
Q1327
Q1312
Q3902
Q5718
Q5708
D1501
D1105
D1103
D1102
D1101
D1106
D3301
D3302
D3303
D3304
D4803
D4804
D4806
D4802
LND134
1-680-017-
21
11

For printed wiring board

- Refer to pages 4-107 to 109 for parts location.
- VC-254 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor
Diode
C
B
E
6 5 4
1 2 3
3
2
1
3
2
1

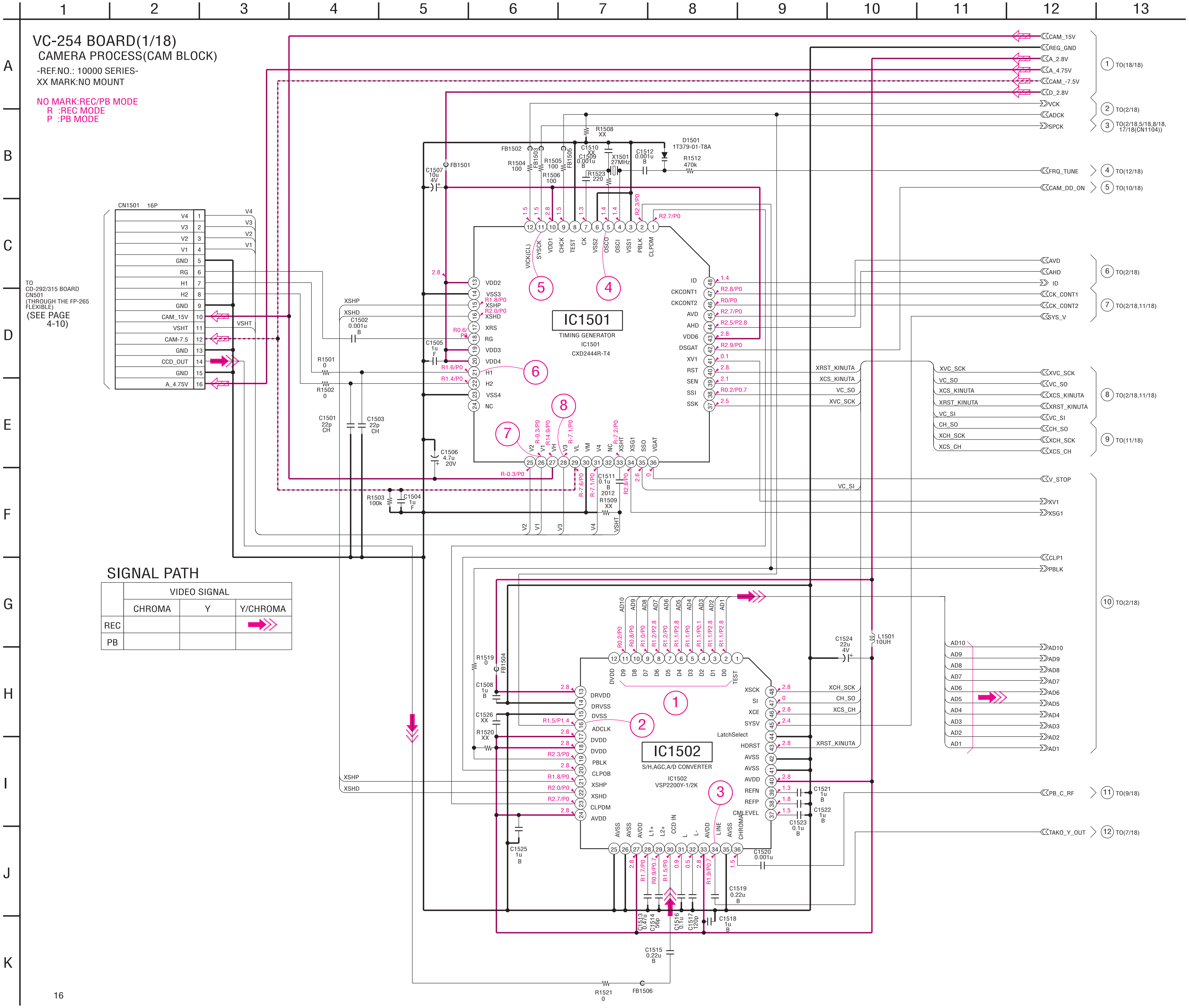
There are a few cases that the part printed on this diagram isn't mounted in this model.

SI-028 (TRV230/TRV330)
SI-029 (TRV530)
STEADY SHOT, REMOTE COMMANDER RECEIVER, LASER LINK
FP-275
(SWITCH)
FP-283
(PANEL REVERSE)
VC-254
CAMERA/Hi8/STD8/PB PROCESS, DV SIGNAL, PB RF AMP, VIDEO IN/OUT, AD CONVERTER, MODE/CAMERA/MECHA CONTROL, LASER LINK, DRUM CAPSTAN DRIVE, AUDIO PROCESS, MIC, DC/DC CONVERTER
FP-282
(FOCUS)

CAMERA/PB PROCESS, PB/REC AMP, ANALOG/DIGITAL PROCESS, VIDEO/AUDIO PROCESS, POWER SUPPLY

VC-254

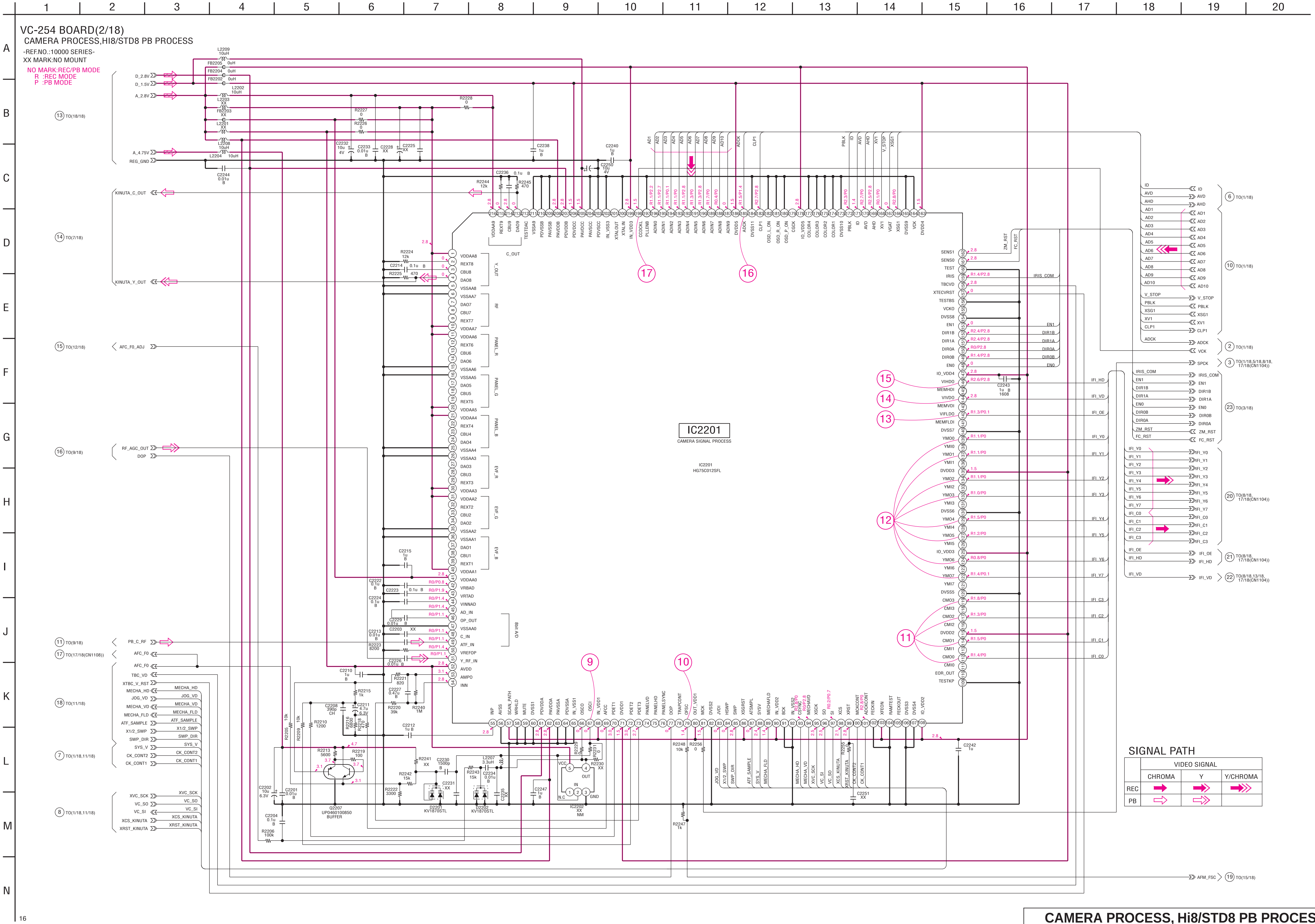
For Schematic Diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-103 for waveforms.


1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I J K
VC-254 BOARD(1/18)
CAMERA PROCESS(CAM BLOCK)
-REF.NO.: 10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
CN1501 16P
TO CD-292/315 BOARD CN501 (THROUGH THE FP-265 FLEXIBLE)
(SEE PAGE 4-10)
IC1501
TIMING GENERATOR
IC1501
CXD2444R-T4
IC1502
S/H,AGC,A/D CONVERTER
IC1502
VSP2200Y-1/2K
X1501 27MHz
D1501 1T379-01-T8A
L1501 10UH
CAM_15V
REG_GND
A_2.8V
A_4.75V
CAM_-7.5V
D_2.8V
TO(18/18)
VCK
ADCK
SPCK
TO(2/18)
TO(2/18,5/18,8/18, 17/18(CN1104))
FRQ_TUNE
TO(12/18)
CAM_DD_ON
TO(10/18)
AVD
AHD
ID
CK_CONT1
CK_CONT2
SYS_V
TO(2/18,11/18)
XVC_SCK
VC_SO
XCS_KINUTA
XRST_KINUTA
VC_SI
CH_SO
XCH_SCK
XCS_CH
TO(11/18)
V_STOP
XV1
XSG1
CLP1
PBLK
AD10
AD9
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
PB_C_RF
TO(9/18)
TAKO_Y_OUT
TO(7/18)
16

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			⇒
PB			

For Schematic Diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-103 for waveforms.

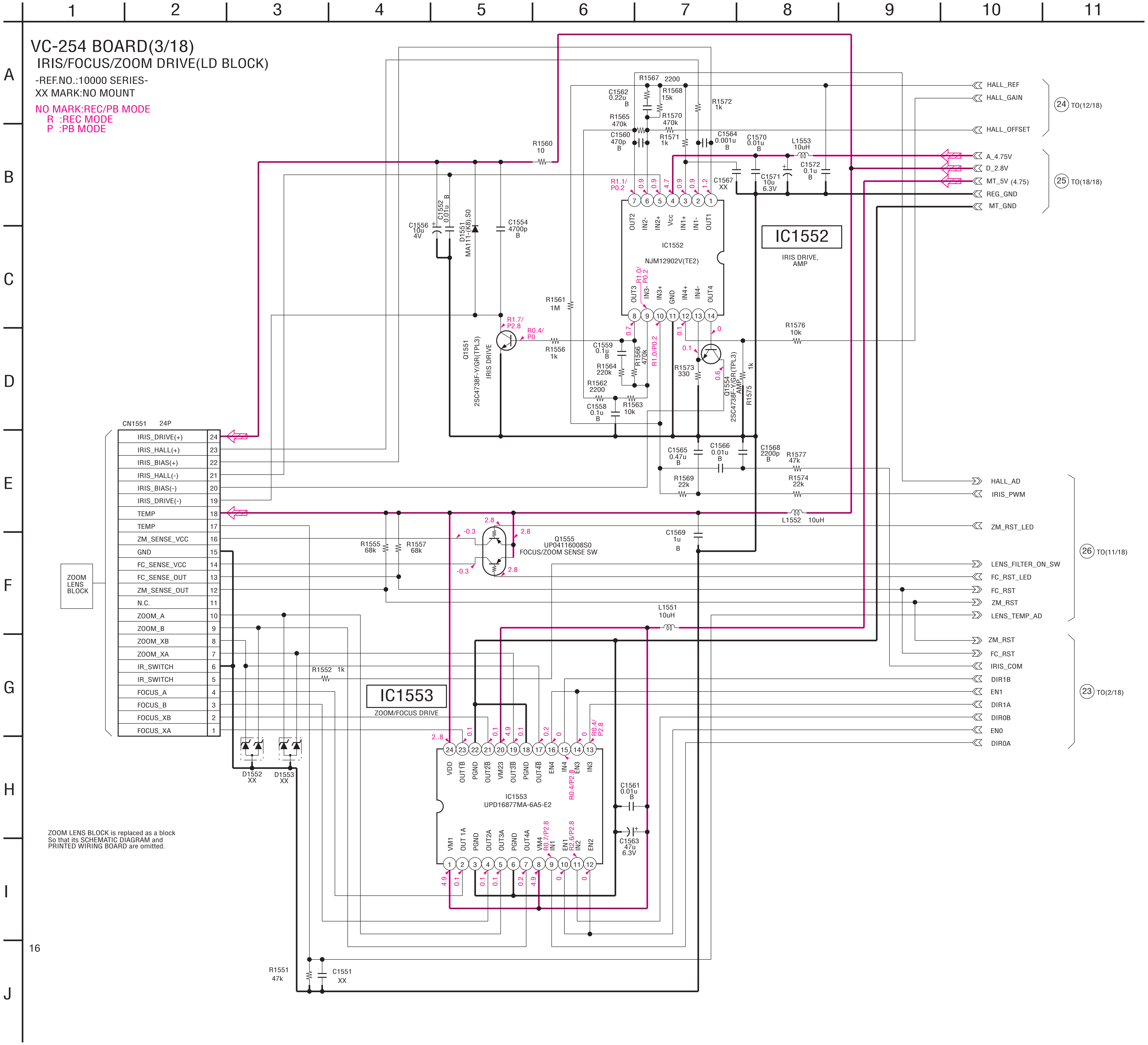

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
K
L
M
N
VC-254 BOARD(2/18)
CAMERA PROCESS,HI8/STD8 PB PROCESS
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC2201
CAMERA SIGNAL PROCESS
IC2201
HG75C012SFL
D_2.8V
D_1.5V
A_2.8V
A_4.75V
REG_GND
KINUTA_C_OUT
KINUTA_Y_OUT
AFC_F0_ADJ
RF_AGC_OUT
DOP
PB_C_RF
AFC_F0
TBC_VD
XTBC_V_RST
MECHA_HD
JOG_VD
MECHA_VD
MECHA_FLD
ATF_SAMPLE
X1/2_SWP
SWP_DIR
SYS_V
CK_CONT2
CK_CONT1
XVC_SCK
VC_SO
VC_SI
XCS_KINUTA
XRST_KINUTA
TO(18/18)
TO(7/18)
TO(12/18)
TO(9/18)
TO(17/18(CN1108))
TO(11/18)
TO(1/18,11/18)
TO(1/18)
TO(3/18)
TO(8/18, 17/18(CN1104))
TO(15/18)
ID
AVD
AHD
AD1
AD2
AD3
AD4
AD5
AD6
AD7
AD8
AD9
AD10
V_STOP
PBLK
XSG1
XV1
CLP1
ADCK
VCK
SPCK
IRIS_COM
EN1
DIR1B
DIR1A
EN0
DIR0B
DIR0A
ZM_RST
FC_RST
IFI_Y0
IFI_Y1
IFI_Y2
IFI_Y3
IFI_Y4
IFI_Y5
IFI_Y6
IFI_Y7
IFI_C0
IFI_C1
IFI_C2
IFI_C3
IFI_OE
IFI_HD
IFI_VD
AFM_FSC
Q2207
UP04601008S0
BUFFER
D2201
KV1870STL
D2202
KV1870STL
IC2202
XX
NM

SIGNAL PATH			
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

CAMERA PROCESS, Hi8/STD8 PB PROCESS
VC-254 (2/18)

For Schematic Diagram

• Refer to page 4-11 for printed wiring board.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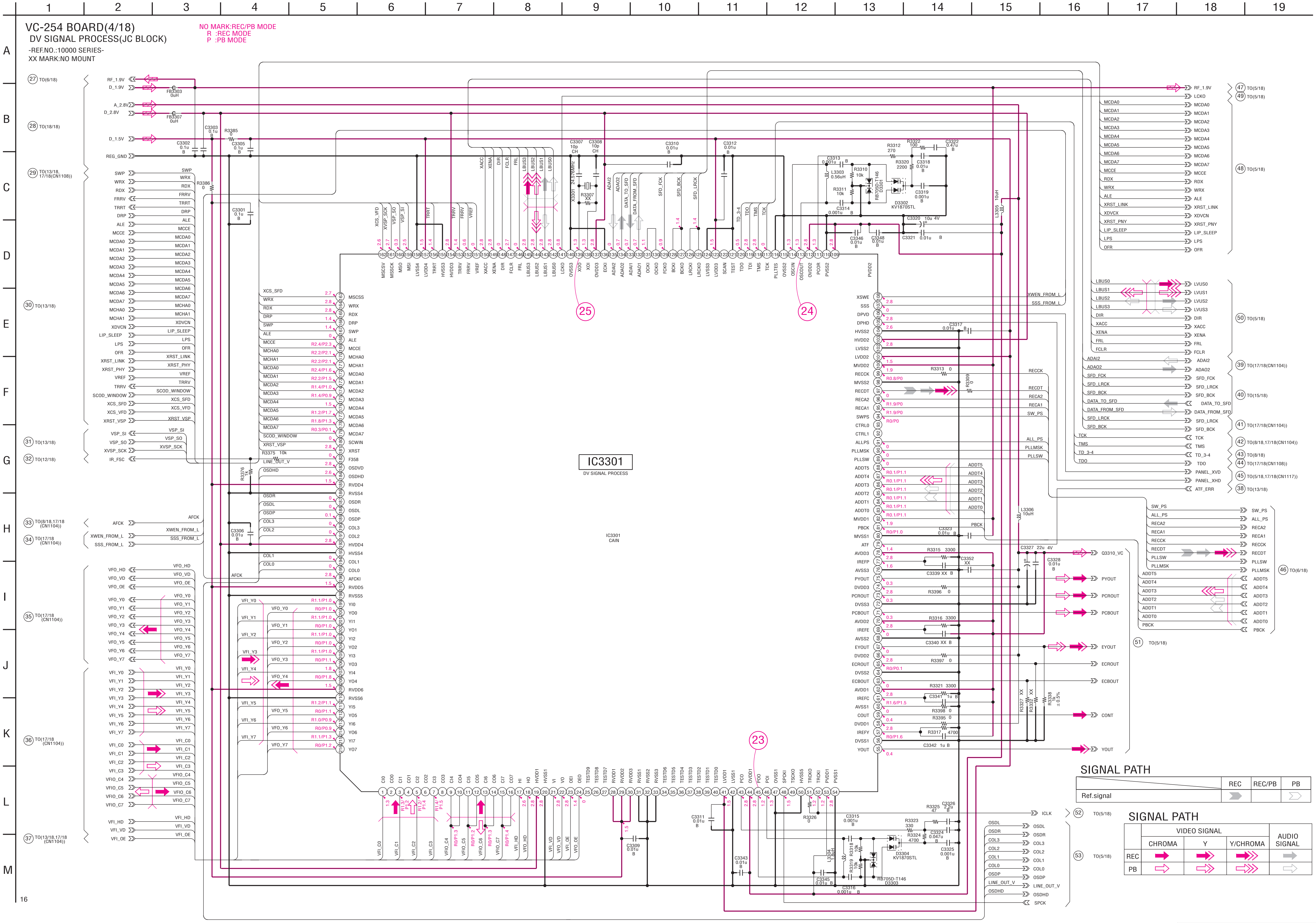
VC-254 BOARD(3/18)
IRIS/FOCUS/ZOOM DRIVE(LD BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC1552
IRIS DRIVE, AMP
NJM12902V(TE2)
OUT2
IN2-
IN2+
Vcc
IN1+
IN1-
OUT1
OUT3
IN3-
IN3+
GND
IN4+
IN4-
OUT4
IC1553
ZOOM/FOCUS DRIVE
UPD16877MA-6A5-E2
VDD
OUT1B
PGND
OUT2B
VM23
OUT3B
PGND
OUT4B
EN4
IN4
EN3
IN3
VM1
OUT 1A
PGND
OUT2A
OUT3A
PGND
OUT4A
VM4
IN1
EN1
IN2
EN2
CN1551 24P
IRIS_DRIVE(+)
IRIS_HALL(+)
IRIS_BIAS(+)
IRIS_HALL(-)
IRIS_BIAS(-)
IRIS_DRIVE(-)
TEMP
TEMP
ZM_SENSE_VCC
GND
FC_SENSE_VCC
FC_SENSE_OUT
ZM_SENSE_OUT
N.C.
ZOOM_A
ZOOM_B
ZOOM_XB
ZOOM_XA
IR_SWITCH
IR_SWITCH
FOCUS_A
FOCUS_B
FOCUS_XB
FOCUS_XA
ZOOM LENS BLOCK
Q1551
2SC4738F-Y/GR(TPL3)
IRIS DRIVE
Q1554
2SC4738F-Y/GR(TPL3)
AMP
Q1555
UP04116008S0
FOCUS/ZOOM SENSE SW
D1551
MA111-(K8).S0
D1552 XX
D1553 XX
R1560 10
R1561 1M
R1556 1k
R1567 2200
R1568 15k
R1565 470k
R1570 470k
R1571 1k
R1572 1k
R1564 220k
R1566 470k
R1562 2200
R1563 10k
R1573 330
R1575 1k
R1576 10k
R1577 47k
R1574 22k
R1569 22k
R1555 68k
R1557 68k
R1552 1k
R1551 47k
C1562 0.22u B
C1560 470p B
C1564 0.001u B
C1570 0.01u B
C1571 10u 6.3V
C1572 0.1u B
C1567 XX
C1556 10u 4V
C1552 0.01u B
C1554 4700p B
C1559 0.1u B
C1558 0.1u B
C1565 0.47u B
C1566 0.01u B
C1568 2200p B
C1569 1u B
C1561 0.01u B
C1563 47u 6.3V
C1551 XX
L1553 10uH
L1552 10uH
L1551 10uH
HALL_REF
HALL_GAIN
HALL_OFFSET
(24) TO(12/18)
A_4.75V
D_2.8V
MT_5V (4.75)
REG_GND
MT_GND
(25) TO(18/18)
HALL_AD
IRIS_PWM
ZM_RST_LED
(26) TO(11/18)
LENS_FILTER_ON_SW
FC_RST_LED
FC_RST
ZM_RST
LENS_TEMP_AD
ZM_RST
FC_RST
IRIS_COM
DIR1B
EN1
DIR1A
DIR0B
EN0
DIR0A
(23) TO(2/18)
R1.1/P0.2
R1.0/P0.2
R1.7/P2.8
R0.4/P0
R1.0/P0.2
R0.4/P2.8
R0.7/P2.8
R2.6/P2.8
R0.4/P2.8
ZOOM LENS BLOCK is replaced as a block
So that its SCHEMATIC DIAGRAM and
PRINTED WIRING BOARD are omitted.
16

For Schematic Diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-103 for waveforms.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M
VC-254 BOARD(4/18)
DV SIGNAL PROCESS(JC BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC3301
DV SIGNAL PROCESS
IC3301
CAIN
(27) TO(6/18)
(28) TO(18/18)
(29) TO(13/18, 17/18(CN1108))
(30) TO(13/18)
(31) TO(13/18)
(32) TO(12/18)
(33) TO(8/18,17/18 (CN1104))
(34) TO(17/18 (CN1104))
(35) TO(17/18 (CN1104))
(36) TO(17/18 (CN1104))
(37) TO(13/18,17/18 (CN1104))
(47) TO(5/18)
(49) TO(5/18)
(48) TO(5/18)
(50) TO(5/18)
(39) TO(17/18(CN1104))
(40) TO(15/18)
(41) TO(17/18(CN1104))
(42) TO(8/18,17/18(CN1104))
(43) TO(8/18)
(44) TO(17/18(CN1108))
(45) TO(5/18,17/18(CN1117))
(38) TO(13/18)
(46) TO(6/18)
(51) TO(5/18)
(52) TO(5/18)
(53) TO(5/18)
(23)
(24)
(25)
RF_1.9V
D_1.9V
A_2.8V
D_2.8V
D_1.5V
REG_GND
FB3303 0uH
FB3307 0uH
C3303 0.1u B
R3385 0
C3302 0.1u B
C3305 0.1u B
C3301 0.1u B
R3386 0
C3306 0.01u B
R3375 10k
R3376 1k
C3307 10p CH
C3308 10p CH
X3301 24.576MHz
R3307 XX
C3310 0.01u B
C3312 0.01u B
C3313 0.001u B
L3303 0.56uH
R3310 10k
R3311 10k
C3314 0.001u B
RB705D-T146 D3301
D3302 KV1870STL
R3312 270
R3322 100
C3322 0.47u B
R3320 2200
C3318 0.01u B
C3319 0.001u B
C3320 10u 4V
C3321 0.01u B
C3346 0.01u B
C3348 0.01u B
L3305 10uH
C3317 0.01u B
R3313 0
R3309 0
L3306 10uH
C3323 0.01u B
C3327 22u 4V
C3328 0.01u B
R3315 3300
C3352 XX
C3339 XX B
R3396 0
R3316 3300
C3340 XX B
R3397 0
R3321 3300
C3341 1u B
R3398 0
R3395 0
R3317 4700
C3342 1u B
R3327 XX
R3330 XX
R3338 ±0.5%
C3309 0.01u B
C3311 0.01u B
C3343 0.01u B
C3345 0.01u B
C3316 0.001u B
C3315 0.001u B
R3326 0
L3304 1.5uH
R3319 10k
R3318 10k
RB705D-T146 D3303
R3325 47
C3326 2.2u B
R3323 330
R3324 4700
C3324 0.047u B
D3304 KV1870STL
C3325 0.001u B
Q3310_VC
PYOUT
PCROUT
PCBOUT
EYOUT
ECROUT
ECBOUT
COUT
YOUT
ICLK
OSDL
OSDR
COL3
COL2
COL1
COL0
OSDP
LINE_OUT_V
OSDHD
SPCK
MCDA0
MCDA1
MCDA2
MCDA3
MCDA4
MCDA5
MCDA6
MCDA7
MCCE
RDX
WRX
ALE
XRST_LINK
XDVCN
XRST_PNY
LIP_SLEEP
LPS
OFR
LCKO
LVUS0
LVUS1
LVUS2
LVUS3
DIR
XACC
XENA
FRL
FCLR
ADAI2
ADAO2
SFD_FCK
SFD_LRCK
SFD_BCK
DATA_TO_SFD
DATA_FROM_SFD
TCK
TMS
TD_3-4
TDO
PANEL_XVD
PANEL_XHD
ATF_ERR
SW_PS
ALL_PS
RECA2
RECA1
RECCK
RECDT
PLLSW
PLLMSK
ADDT5
ADDT4
ADDT3
ADDT2
ADDT1
ADDT0
PBCK
SWP
FRRV
TRRT
DRP
MCHA0
MCHA1
VREF
TRRV
SCOD_WINDOW
XCS_SFD
XCS_VFD
XRST_VSP
VSP_SI
VSP_SO
XVSP_SCK
IR_FSC
AFCK
XWEN_FROM_L
SSS_FROM_L
VFO_HD
VFO_VD
VFO_OE
VFO_Y0
VFO_Y1
VFO_Y2
VFO_Y3
VFO_Y4
VFO_Y5
VFO_Y6
VFO_Y7
VFI_Y0
VFI_Y1
VFI_Y2
VFI_Y3
VFI_Y4
VFI_Y5
VFI_Y6
VFI_Y7
VFI_C0
VFI_C1
VFI_C2
VFI_C3
VFIO_C4
VFIO_C5
VFIO_C6
VFIO_C7
VFI_HD
VFI_VD
VFI_OE
16

SIGNAL PATH

	REC	REC/PB	PB
Ref.signal	➡		⇨

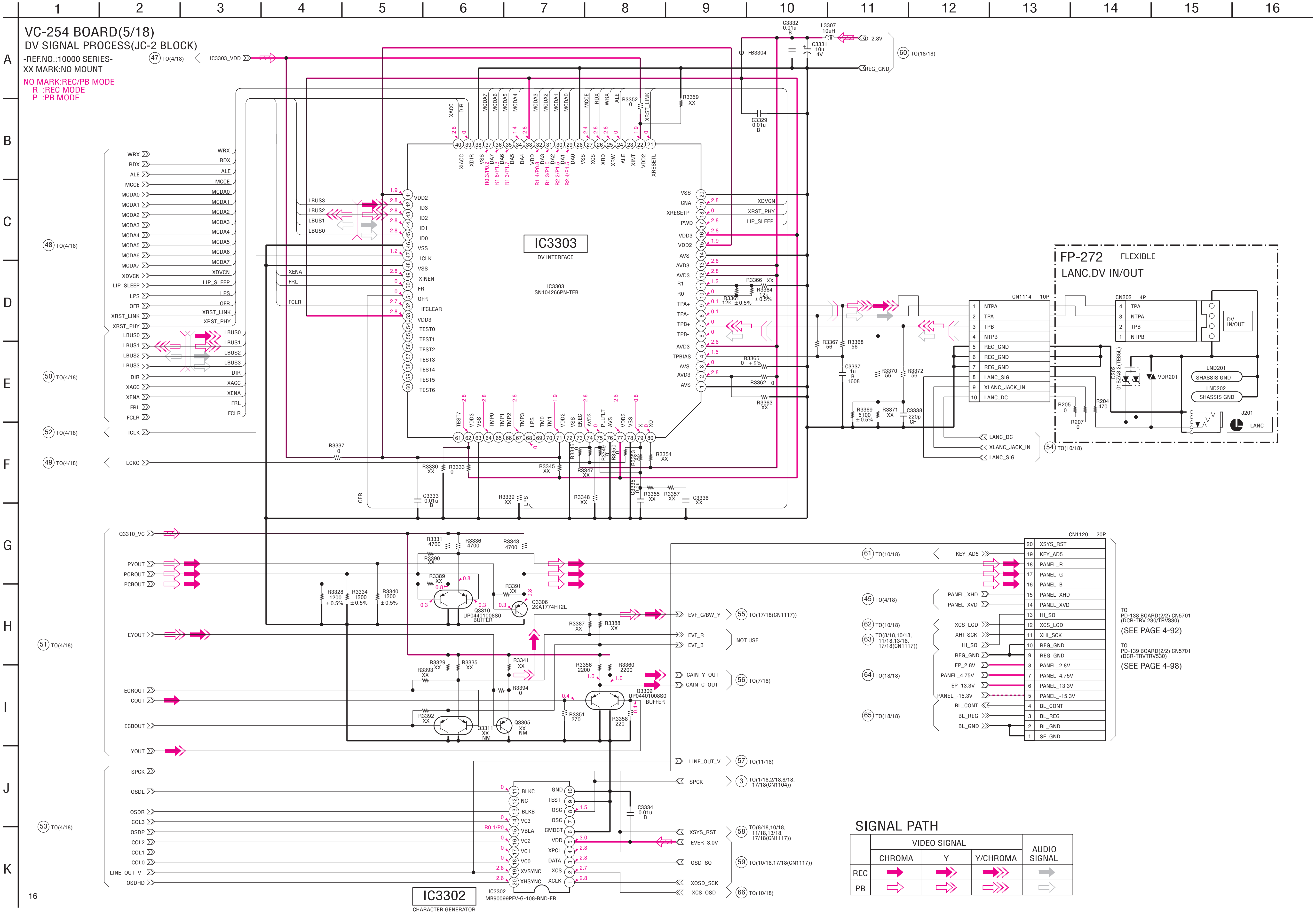
SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

DV SIGNAL PROCESS-1
VC-254 (4/18)

For Schematic Diagram

- Refer to page 4-11 for VC-254 printed wiring board.
- Refer to page 4-53 for printed wiring board of FP-272 flexible.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VC-254 BOARD(5/18)
DV SIGNAL PROCESS(JC-2 BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
(47) TO(4/18)
IC3303_VDD
(48) TO(4/18)
(50) TO(4/18)
(52) TO(4/18)
ICLK
(49) TO(4/18)
LCKO
(51) TO(4/18)
(53) TO(4/18)
IC3303
DV INTERFACE
IC3303
SN104266PN-TEB
FB3304
C3332 0.01u B
L3307 10uH
C3331 10u 4V
D_2.8V
REG_GND
(60) TO(18/18)
C3329 0.01u B
R3359 XX
R3352 0
FP-272 FLEXIBLE
LANC,DV IN/OUT
CN1114 10P
NTPA
TPA
TPB
NTPB
REG_GND
LANC_SIG
XLANC_JACK_IN
LANC_DC
CN202 4P
DV IN/OUT
LND201 SHASSIS GND
LND202 SHASSIS GND
VDR201
D202 01BZA8.2(TE85L)
R205 0
R204 470
R207 0
J201 LANC
(54) TO(10/18)
LANC_DC
XLANC_JACK_IN
LANC_SIG
Q3310_VC
PYOUT
PCROUT
PCBOUT
EYOUT
ECROUT
COUT
ECBOUT
YOUT
Q3310 UP04401008S0 BUFFER
Q3306 2SA1774HT2L
Q3309 UP04401008S0 BUFFER
Q3311 XX NM
Q3305 XX NM
EVF_G/BW_Y
EVF_R
EVF_B
NOT USE
(55) TO(17/18(CN1117))
CAIN_Y_OUT
CAIN_C_OUT
(56) TO(7/18)
LINE_OUT_V
(57) TO(11/18)
SPCK
(3) TO(1/18,2/18,8/18, 11/18,13/18, 17/18(CN1104))
XSYS_RST
EVER_3.0V
(58) TO(8/18,10/18, 11/18,13/18, 17/18(CN1117))
OSD_SO
(59) TO(10/18,17/18(CN1117))
XOSD_SCK
XCS_OSD
(66) TO(10/18)
CN1120 20P
XSYS_RST
KEY_AD5
PANEL_R
PANEL_G
PANEL_B
PANEL_XHD
PANEL_XVD
HI_SO
XCS_LCD
XHI_SCK
REG_GND
PANEL_2.8V
PANEL_4.75V
PANEL_13.3V
PANEL_-15.3V
BL_CONT
BL_REG
BL_GND
SE_GND
(61) TO(10/18)
(45) TO(4/18)
(62) TO(10/18)
(63) TO(8/18,10/18, 11/18,13/18, 17/18(CN1117))
(64) TO(18/18)
(65) TO(18/18)
TO PD-138 BOARD(2/2) CN5701 (DCR-TRV 230/TRV330)
(SEE PAGE 4-92)
TO PD-139 BOARD(2/2) CN5701 (DCR-TRVTRV530)
(SEE PAGE 4-98)
IC3302
CHARACTER GENERATOR
IC3302 MB90099PFV-G-108-BND-ER
C3334 0.01u B
16

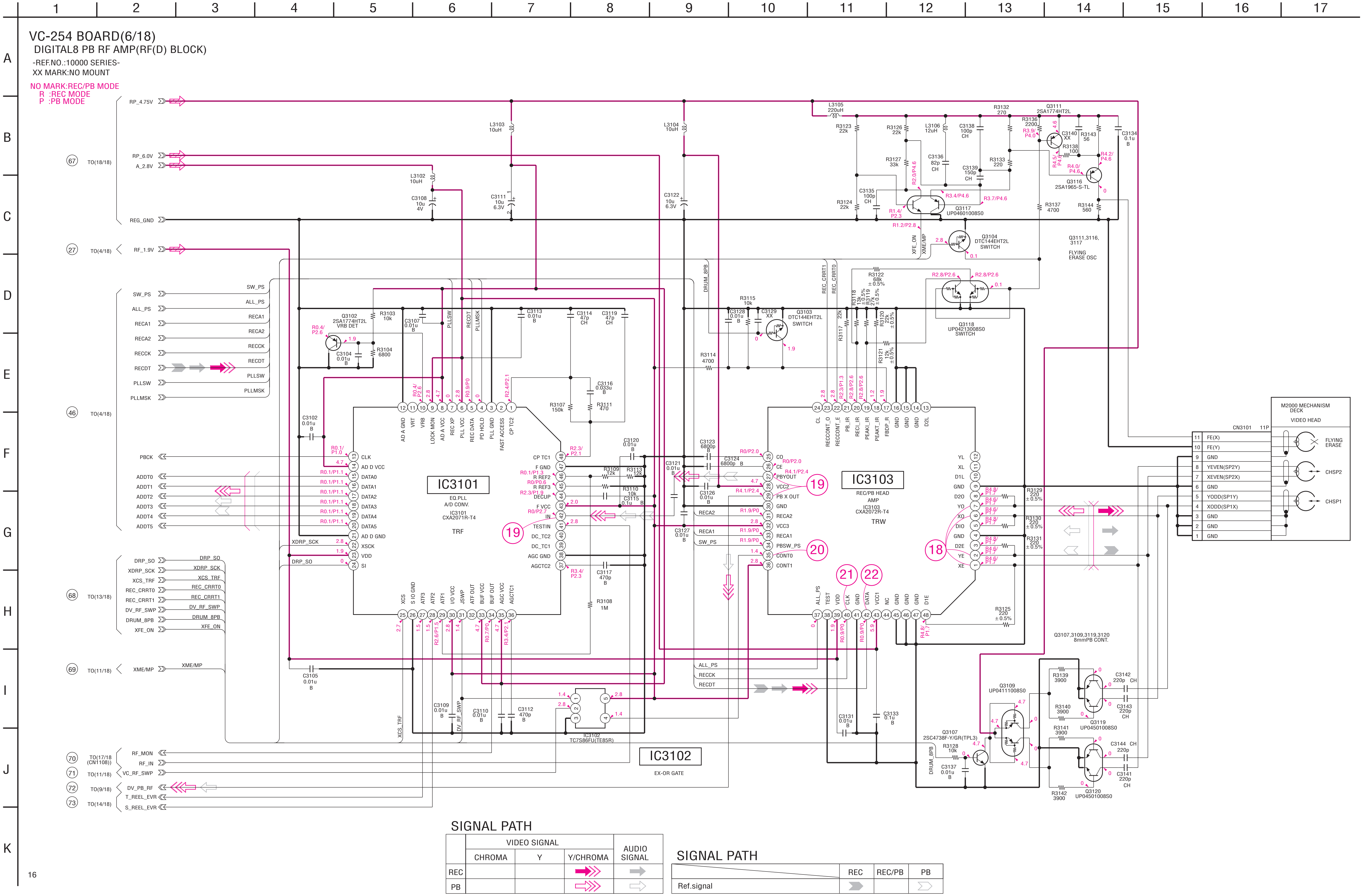
SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

For Schematic Diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-103 for waveforms.

VC-254 BOARD(6/18)
DIGITAL8 PB RF AMP(RF(D) BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE



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J
K
16
RP_4.75V
RP_6.0V
A_2.8V
REG_GND
RF_1.9V
TO(18/18)
TO(4/18)
TO(13/18)
TO(11/18)
TO(17/18) (CN1108))
TO(9/18)
TO(14/18)
SW_PS
ALL_PS
RECA1
RECA2
RECCK
RECDT
PLLSW
PLLMSK
PBCK
ADDT0
ADDT1
ADDT2
ADDT3
ADDT4
ADDT5
DRP_SO
XDRP_SCK
XCS_TRF
REC_CRRT0
REC_CRRT1
DV_RF_SWP
DRUM_8PB
XFE_ON
XME/MP
RF_MON
RF_IN
VC_RF_SWP
DV_PB_RF
T_REEL_EVR
S_REEL_EVR
IC3101
EQ.PLL
A/D CONV.
IC3101
CXA2071R-T4
TRF
IC3102
EX-OR GATE
IC3102
TC7S86FU(TE85R)
IC3103
REC/PB HEAD
AMP
IC3103
CXA2072R-T4
TRW
Q3102
2SA1774HT2L
VRB DET
Q3103
DTC144EHT2L
SWITCH
Q3104
DTC144EHT2L
SWITCH
Q3111
2SA1774HT2L
Q3116
2SA1965-S-TL
Q3117
UP04601008S0
Q3111,3116,
3117
FLYING
ERASE OSC
Q3118
UP04213008S0
SWITCH
Q3107
2SC4738F-Y/GR(TPL3)
Q3109
UP04111008S0
Q3119
UP04501008S0
Q3120
UP04501008S0
Q3107,3109,3119,3120
8mmPB CONT.
M2000 MECHANISM
DECK
VIDEO HEAD
CN3101 11P
FE(X)
FE(Y)
GND
YEVEN(SP2Y)
XEVEN(SP2X)
GND
YODD(SP1Y)
XODD(SP1X)
GND
GND
GND
FLYING
ERASE
CHSP2
CHSP1
18
19
20
21
22

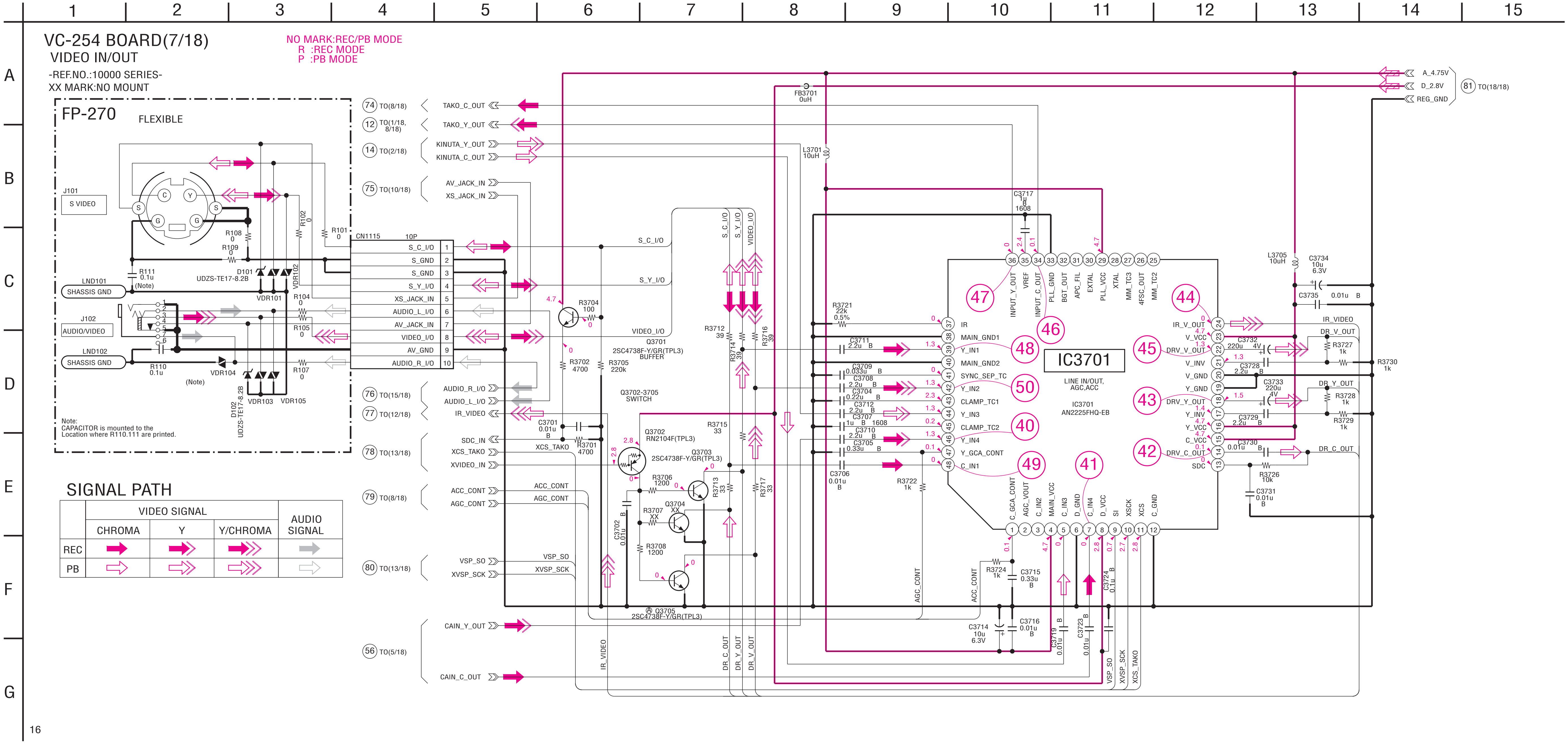
SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

SIGNAL PATH

	REC	REC/PB	PB
Ref.signal	➡		⇨

For Schematic Diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveforms.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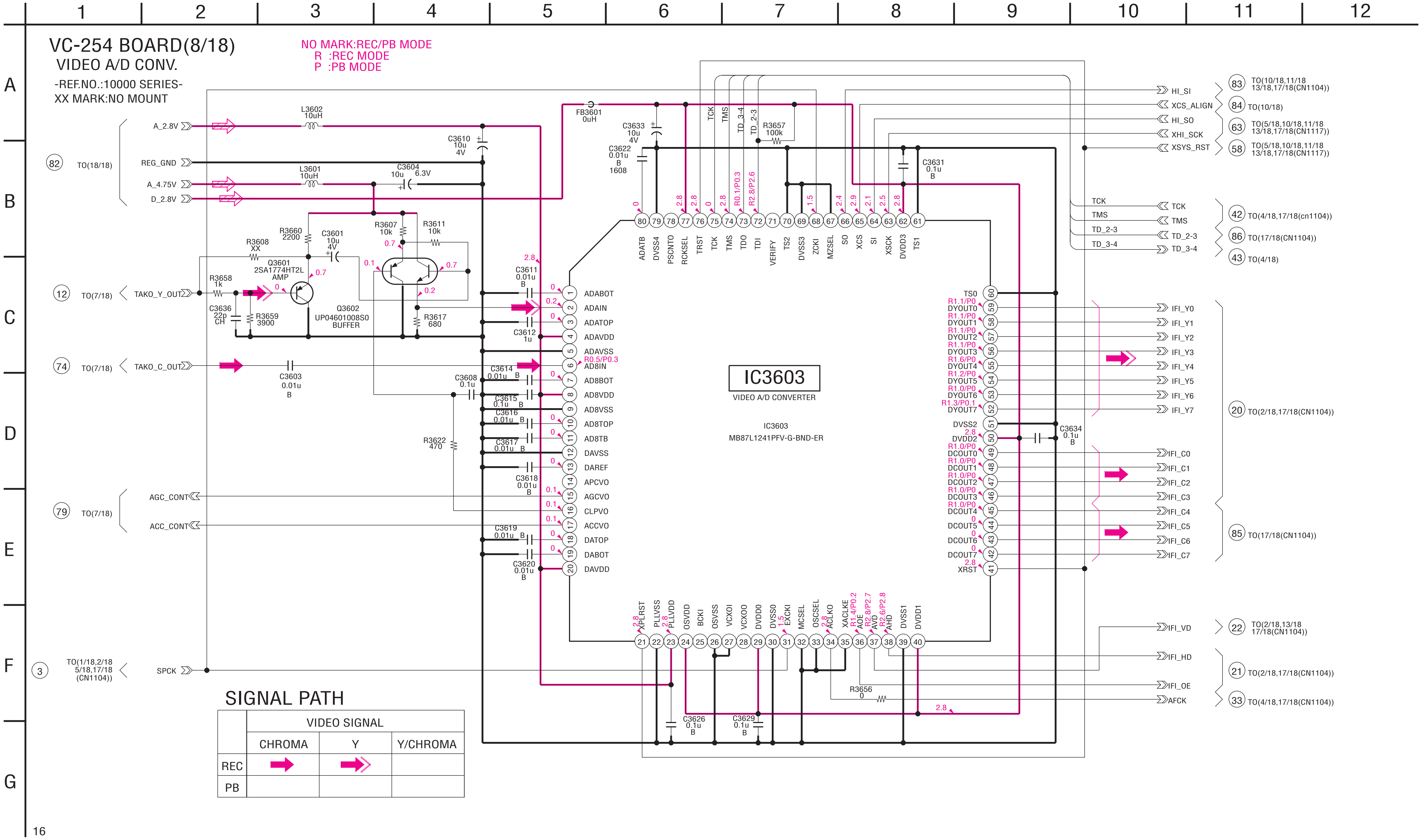
VC-254 BOARD(7/18)
VIDEO IN/OUT
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
FP-270
FLEXIBLE
J101
S VIDEO
J102
AUDIO/VIDEO
LND101
SHASSIS GND
LND102
SHASSIS GND
D101
UDZS-TE17-8.2B
D102
UDZS-TE17-8.2B
VDR101
VDR102
VDR103
VDR104
VDR105
R101
R102
R104
R105
R107
R108
R109
R110
R111
Note:
CAPACITOR is mounted to the Location where R110.111 are printed.
CN1115
10P
S_C_I/O
S_GND
S_GND
S_Y_I/O
XS_JACK_IN
AUDIO_L_I/O
AV_JACK_IN
VIDEO_I/O
AV_GND
AUDIO_R_I/O
TO(8/18)
TAKO_C_OUT
TO(1/18, 8/18)
TAKO_Y_OUT
TO(2/18)
KINUTA_Y_OUT
KINUTA_C_OUT
TO(10/18)
AV_JACK_IN
XS_JACK_IN
TO(15/18)
AUDIO_R_I/O
AUDIO_L_I/O
TO(12/18)
IR_VIDEO
TO(13/18)
SDC_IN
XCS_TAKO
XVIDEO_IN
TO(8/18)
ACC_CONT
AGC_CONT
TO(13/18)
VSP_SO
XVSP_SCK
TO(5/18)
CAIN_Y_OUT
CAIN_C_OUT
A_4.75V
D_2.8V
REG_GND
TO(18/18)
FB3701
L3701
L3705
Q3701
2SC4738F-Y/GR(TPL3)
BUFFER
Q3702
RN2104F(TPL3)
Q3703
2SC4738F-Y/GR(TPL3)
Q3704
Q3705
2SC4738F-Y/GR(TPL3)
Q3702-3705
SWITCH
IC3701
LINE IN/OUT, AGC,ACC
IC3701
AN2225FHQ-EB
IR
MAIN_GND1
Y_IN1
MAIN_GND2
SYNC_SEP_TC
Y_IN2
CLAMP_TC1
Y_IN3
CLAMP_TC2
Y_IN4
Y_GCA_CONT
C_IN1
INPUT_Y_OUT
VREF
INPUT_C_OUT
PLL_GND
BGT_OUT
APC_FIL
EXTAL
PLL_VCC
XTAL
MM_TC3
4FSC_OUT
MM_TC2
IR_V_OUT
V_VCC
DRV_V_OUT
V_INV
V_GND
Y_GND
DRV_Y_OUT
Y_INV
Y_VCC
C_VCC
DRV_C_OUT
SDC
C_GCA_CONT
AGC_VOUT
C_IN2
MAIN_VCC
C_IN3
D_GND
C_IN4
D_VCC
SI
XSCK
XCS
C_GND
IR_VIDEO
DR_V_OUT
DR_Y_OUT
DR_C_OUT
S_C_I/O
S_Y_I/O
VIDEO_I/O
IR_VIDEO
DR_C_OUT
DR_Y_OUT
DR_V_OUT
VSP_SO
XVSP_SCK
XCS_TAKO
AGC_CONT
ACC_CONT
16

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

For Schematic Diagram

- Refer to page 4-11 for printed wiring board.

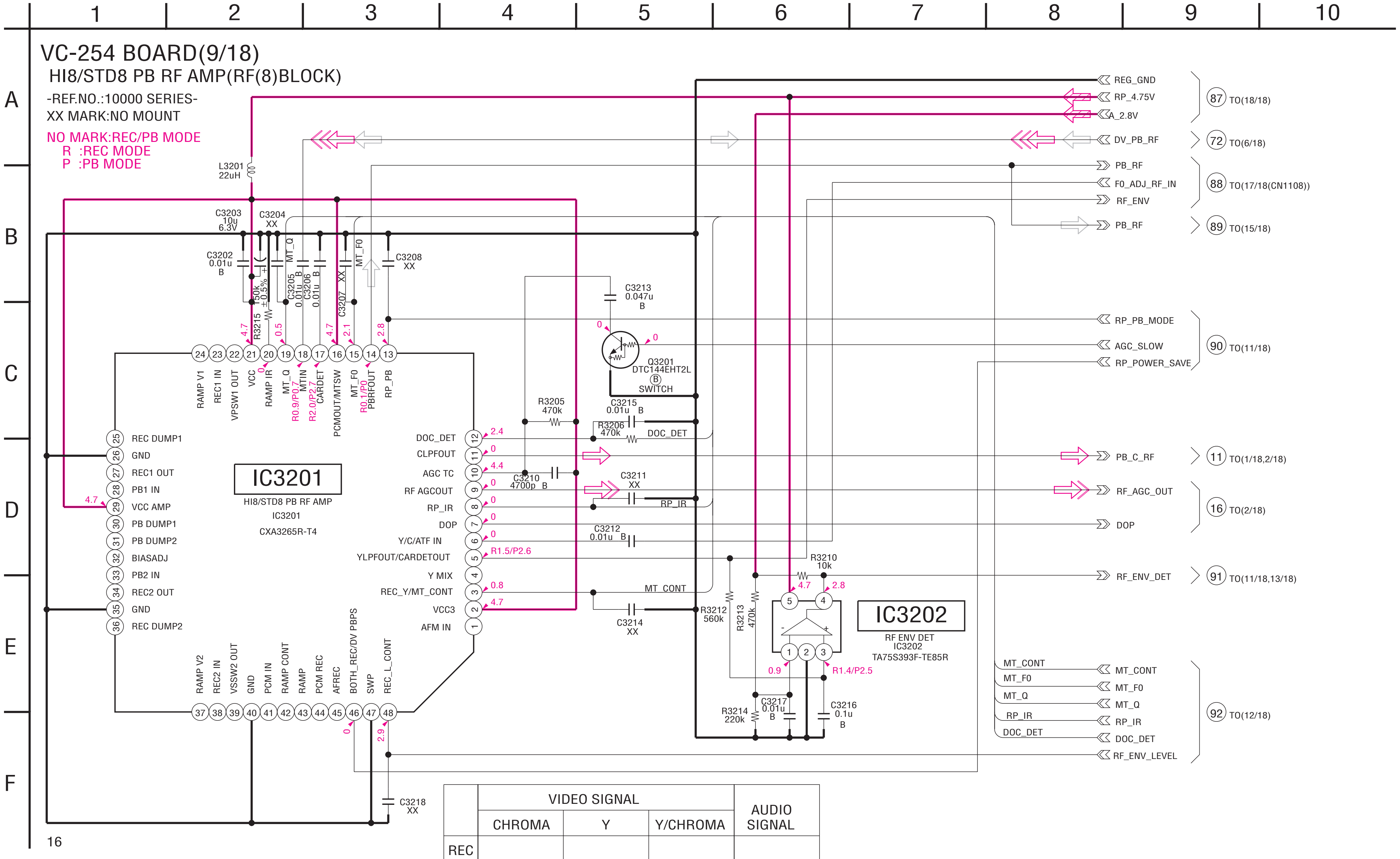

1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G
VC-254 BOARD(8/18)
VIDEO A/D CONV.
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC3603
VIDEO A/D CONVERTER
IC3603
MB87L1241PFV-G-BND-ER
A_2.8V
REG_GND
A_4.75V
D_2.8V
TO(18/18)
TAKO_Y_OUT
TO(7/18)
TAKO_C_OUT
TO(7/18)
AGC_CONT
ACC_CONT
TO(7/18)
SPCK
TO(1/18,2/18 5/18,17/18 (CN1104))
L3602 10uH
L3601 10uH
C3610 10u 4V
C3604 10u 6.3V
FB3601 0uH
C3633 10u 4V
C3622 0.01u B 1608
R3657 100k
C3631 0.1u B
Q3601 2SA1774HT2L AMP
Q3602 UP04601008S0 BUFFER
R3608 XX
R3660 2200
C3601 10u 4V
R3607 10k
R3611 10k
R3658 1k
C3636 22p CH
R3659 3900
R3617 680
C3603 0.01u B
C3611 0.01u B
C3612 1u
C3614 0.01u B
C3608 0.1u
C3615 0.1u B
C3616 0.01u B
C3617 0.01u B
C3618 0.01u B
C3619 0.01u B
C3620 0.01u B
R3622 470
C3634 0.1u B
C3626 0.1u B
C3629 0.1u B
R3656 0
ADABOT ADAIN ADATOP ADAVDD ADAVSS AD8IN AD8BOT AD8VDD AD8VSS AD8TOP AD8TB DAVSS DAREF APCVO AGCVO CLPVO ACCVO DATOP DABOT DAVDD
ADATB DVSS4 PSCNTO RCKSEL TRST TCK TMS TDO TDI VERIFY TS2 DVSS3 ZCKI MZSEL SO XCS SI XSCK DVDD3 TS1
TS0 DYOUT0 DYOUT1 DYOUT2 DYOUT3 DYOUT4 DYOUT5 DYOUT6 DYOUT7 DVSS2 DVDD2 DCOUT0 DCOUT1 DCOUT2 DCOUT3 DCOUT4 DCOUT5 DCOUT6 DCOUT7 XRST
XPLRST PLLVSS PLLVDD OSVDD BCKI OSVSS VCXOI VCXOO DVDD0 DVSS0 EXCKI MCSEL OSCSEL ACLKO XACLKE AOE AVD AHD DVSS1 DVDD1
HI_SI XCS_ALIGN HI_SO XHI_SCK XSYS_RST
TO(10/18,11/18 13/18,17/18(CN1104))
TO(10/18)
TO(5/18,10/18,11/18 13/18,17/18(CN1117))
TO(5/18,10/18,11/18 13/18,17/18(CN1117))
TCK TMS TD_2-3 TD_3-4
TO(4/18,17/18(cn1104))
TO(17/18(CN1104))
TO(4/18)
IFI_Y0 IFI_Y1 IFI_Y2 IFI_Y3 IFI_Y4 IFI_Y5 IFI_Y6 IFI_Y7
TO(2/18,17/18(CN1104))
IFI_C0 IFI_C1 IFI_C2 IFI_C3 IFI_C4 IFI_C5 IFI_C6 IFI_C7
TO(17/18(CN1104))
IFI_VD
TO(2/18,13/18 17/18(CN1104))
IFI_HD IFI_OE AFCK
TO(2/18,17/18(CN1104))
TO(4/18,17/18(CN1104))
82 12 74 79 3 83 84 63 58 42 86 43 20 85 22 21 33
16

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	⇨	
PB			

For Schematic Diagram

- Refer to page 4-11 for printed wiring board.


1
2
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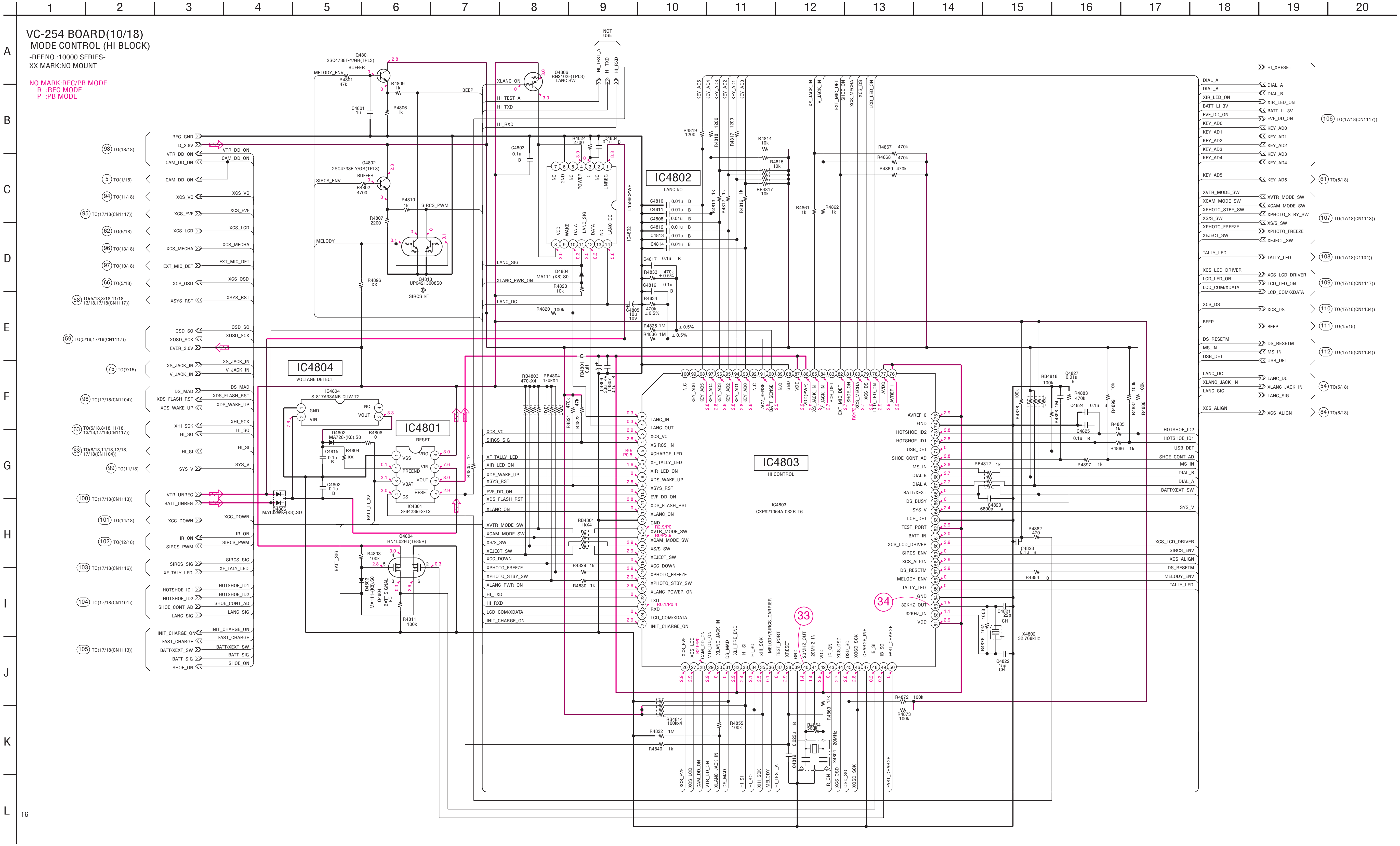
A
B
C
D
E
F
VC-254 BOARD(9/18)
HI8/STD8 PB RF AMP(RF(8)BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
L3201 22uH
C3203 10u 6.3V
C3204 XX
C3202 0.01u B
R3215 10k ±0.5%
C3205 0.01u B
C3206 0.01u B
C3207 XX
C3208 XX
MT_Q
MT_F0
IC3201
HI8/STD8 PB RF AMP
IC3201
CXA3265R-T4
RAMP V1
REC1 IN
VPSW1 OUT
VCC
RAMP IR
MT_Q
MTIN
CARDET
PCMOUT/MTSW
MT_F0
PBRFOUT
RP_PB
R0.9/P0.7
R2.0/P2.7
R0.1/P0
REC DUMP1
GND
REC1 OUT
PB1 IN
VCC AMP
PB DUMP1
PB DUMP2
BIASADJ
PB2 IN
REC2 OUT
GND
REC DUMP2
DOC_DET
CLPFOUT
AGC TC
RF AGCOUT
RP_IR
DOP
Y/C/ATF IN
YLPFOUT/CARDETOUT
Y MIX
REC_Y/MT_CONT
VCC3
AFM IN
RAMP V2
REC2 IN
VSSW2 OUT
GND
PCM IN
RAMP CONT
RAMP
PCM REC
AFREC
BOTH_REC/DV PBPS
SWP
REC_L_CONT
4.7
0.5
4.7
2.1
2.8
0
2.4
0
4.4
0
0
0
0
R1.5/P2.6
0.8
4.7
4.7
0
2.9
C3213 0.047u B
Q3201 DTC144EHT2L
B SWITCH
R3205 470k
C3215 0.01u B
R3206 470k
DOC_DET
C3210 4700p B
C3211 XX
RP_IR
C3212 0.01u B
MT_CONT
C3214 XX
R3212 560k
R3213 470k
R3210 10k
4.7
2.8
IC3202
RF ENV DET
IC3202
TA75S393F-TE85R
0.9
R1.4/P2.5
R3214 220k
C3217 0.01u B
C3216 0.1u B
C3218 XX
16
REG_GND
RP_4.75V
A_2.8V
87 TO(18/18)
DV_PB_RF
72 TO(6/18)
PB_RF
F0_ADJ_RF_IN
RF_ENV
88 TO(17/18(CN1108))
PB_RF
89 TO(15/18)
RP_PB_MODE
AGC_SLOW
RP_POWER_SAVE
90 TO(11/18)
PB_C_RF
11 TO(1/18,2/18)
RF_AGC_OUT
DOP
16 TO(2/18)
RF_ENV_DET
91 TO(11/18,13/18)
MT_CONT
MT_F0
MT_Q
RP_IR
DOC_DET
MT_CONT
MT_F0
MT_Q
RP_IR
DOC_DET
RF_ENV_LEVEL
92 TO(12/18)

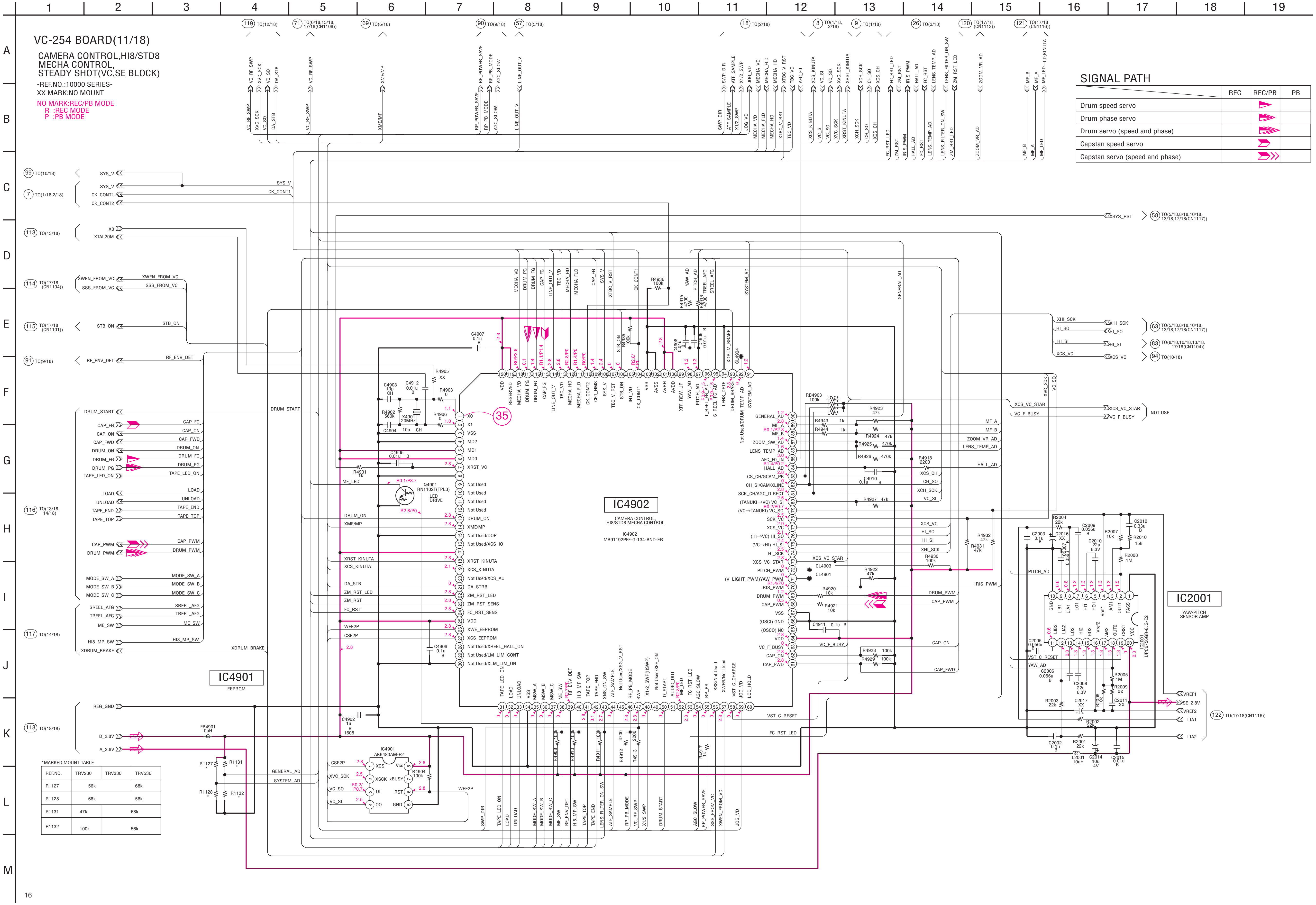
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB	⇨	⇨⇨	⇨⇨⇨	⇨

For Schematic Diagram

- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveforms.


VC-254 BOARD(10/18)
MODE CONTROL (HI BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
NOT USE
Q4801 2SC4738F-Y/GR(TPL3) BUFFER
Q4802 2SC4738F-Y/GR(TPL3) BUFFER
Q4806 RN2102F(TPL3) LANC SW
Q4813 UP04213008S0 SIRCS I/F
Q4804 HN1L02FU(TE85R)
D4804 MA111-(K8).S0
D4802 MA728-(K8).S0
D4806 MA132WK-(K8).SO
D4803 MA111-(K8).S0
IC4802 LANC I/O
TL1596CPWR
IC4804 VOLTAGE DETECT
IC4804 S-817A33ANB-CUW-T2
IC4801 RESET
IC4801 S-84239FS-T2
IC4803 HI CONTROL
IC4803 CXP921064A-032R-T6
X4802 32.768kHz
X4801 20MHz
33
34
HI_XRESET
DIAL_A
DIAL_B
XIR_LED_ON
BATT_LI_3V
EVF_DD_ON
KEY_AD0
KEY_AD1
KEY_AD2
KEY_AD3
KEY_AD4
KEY_AD5
XVTR_MODE_SW
XCAM_MODE_SW
XPHOTO_STBY_SW
XS/S_SW
XPHOTO_FREEZE
XEJECT_SW
TALLY_LED
XCS_LCD_DRIVER
LCD_LED_ON
LCD_COM/XDATA
XCS_DS
BEEP
DS_RESETM
MS_IN
USB_DET
LANC_DC
XLANC_JACK_IN
LANC_SIG
XCS_ALIGN
REG_GND
D_2.8V
VTR_DD_ON
CAM_DD_ON
XCS_VC
XCS_EVF
XCS_LCD
XCS_MECHA
EXT_MIC_DET
XCS_OSD
XSYS_RST
OSD_SO
XOSD_SCK
EVER_3.0V
XS_JACK_IN
V_JACK_IN
DS_MAD
XDS_FLASH_RST
XDS_WAKE_UP
XHI_SCK
HI_SO
HI_SI
SYS_V
VTR_UNREG
BATT_UNREG
XCC_DOWN
IR_ON
SIRCS_PWM
SIRCS_SIG
XF_TALY_LED
HOTSHOE_ID1
HOTSHOE_ID2
SHOE_CONT_AD
LANC_SIG
INIT_CHARGE_ON
FAST_CHARGE
BATT/XEXT_SW
BATT_SIG
SHOE_ON
16

For Schematic Diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveform.


VC-254 BOARD(11/18)
CAMERA CONTROL,HI8/STD8
MECHA CONTROL,
STEADY SHOT(VC,SE BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC4902
CAMERA CONTROL, HI8/STD8 MECHA CONTROL
IC4902
MB91192PFF-G-134-BND-ER
IC4901
EEPROM
IC4901
AK6480AM-E2
IC2001
YAW/PITCH SENSOR AMP
IC2001
UPC4796GR-8JG-E2
Q4901
RN1102F(TPL3)
LED DRIVE
X4901
20MHz
35
NOT USE
16

SIGNAL PATH

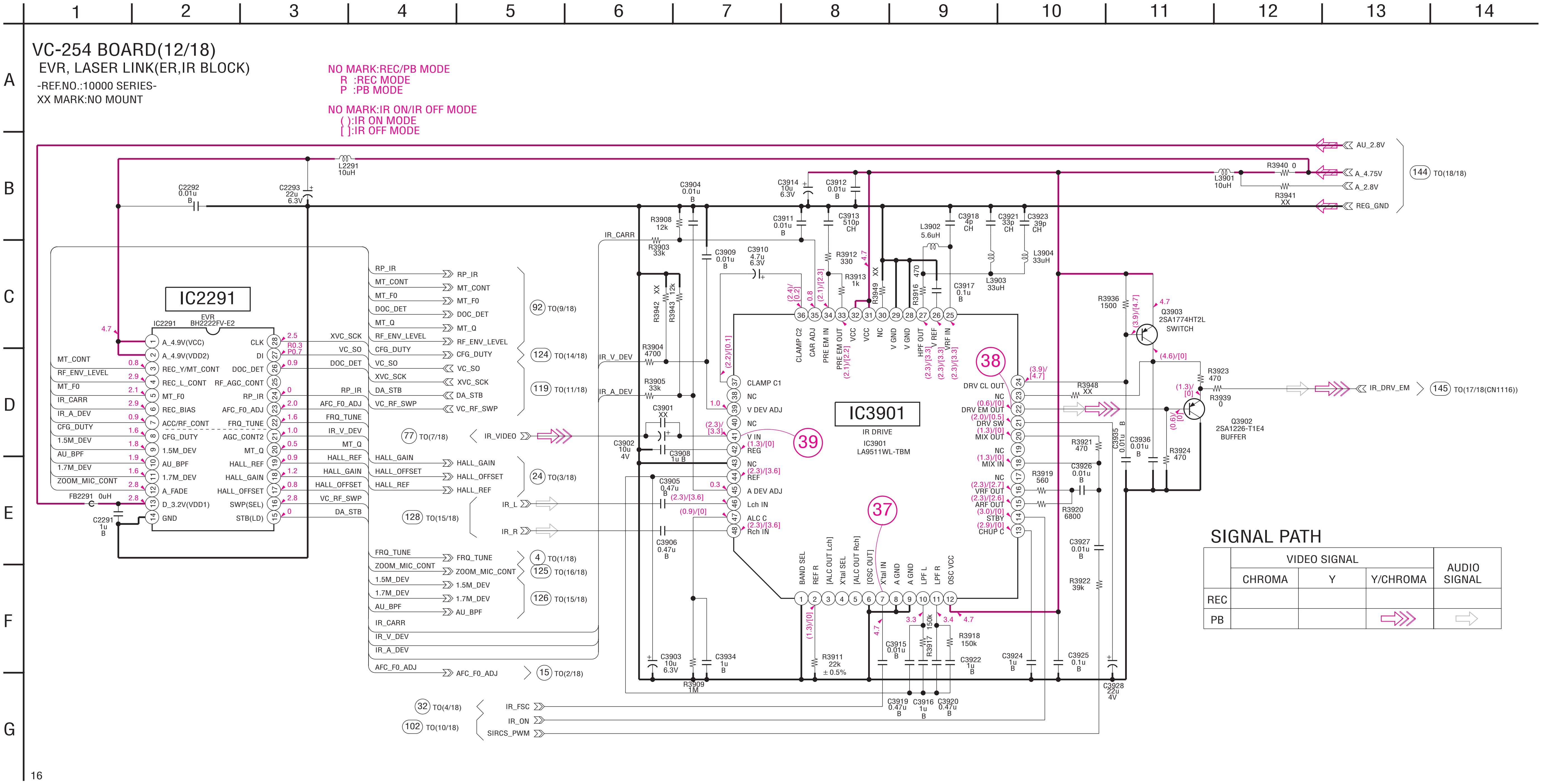
	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶>	
Drum servo (speed and phase)		▶>>	
Capstan speed servo		▶	
Capstan servo (speed and phase)		▶>>	

*MARKED:MOUNT TABLE

REF.NO.	TRV230	TRV330	TRV530
R1127	56k		68k
R1128	68k		56k
R1131	47k	68k	
R1132	100k	56k	

For Schematic Diagram

- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveforms.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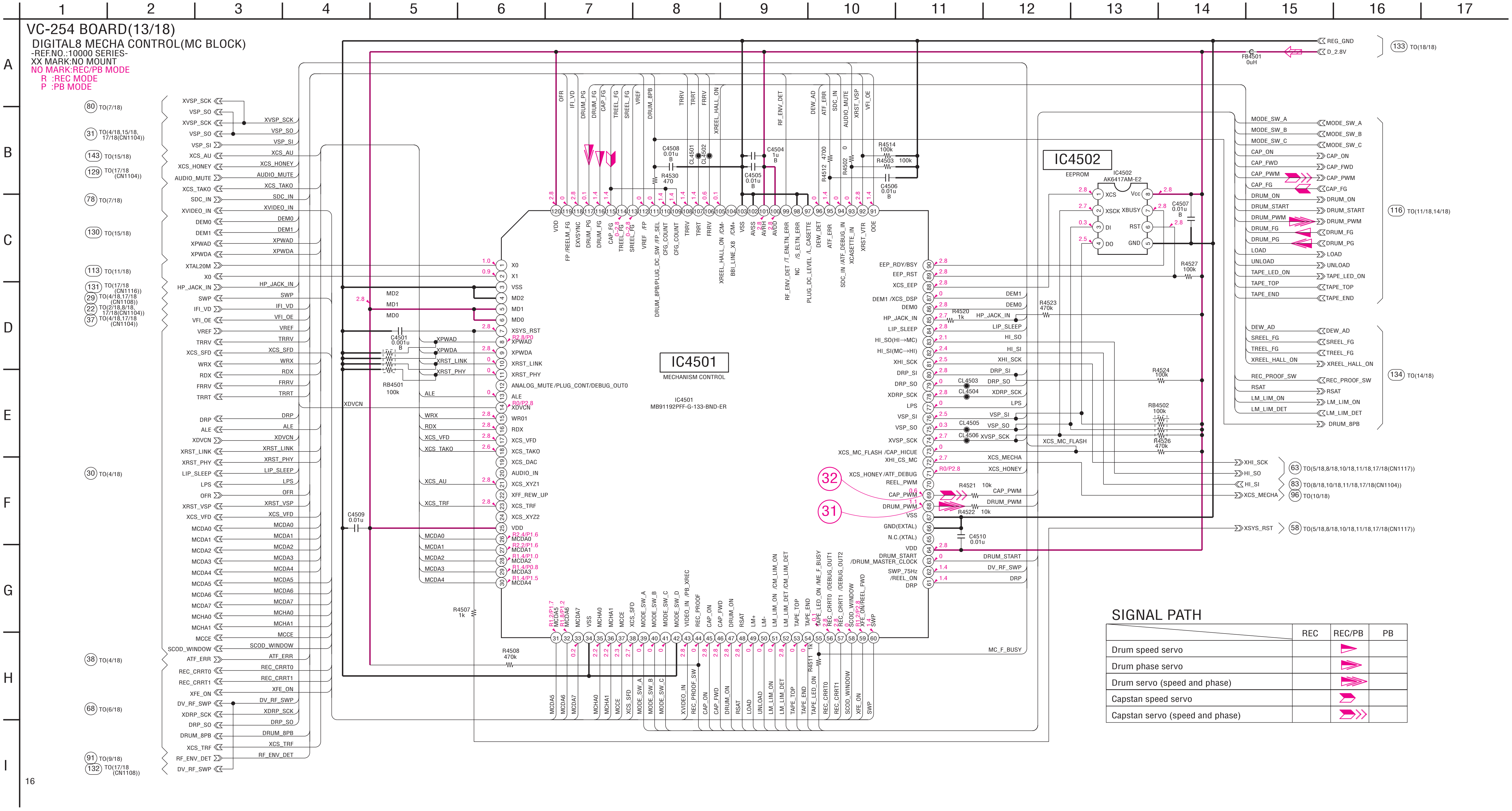
11
12
13
14
A
B
C
D
E
F
G
VC-254 BOARD(12/18)
EVR, LASER LINK(ER,IR BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
NO MARK:IR ON/IR OFF MODE
( ):IR ON MODE
[ ]:IR OFF MODE
IC2291
EVR
IC2291 BH2222FV-E2
A_4.9V(VCC)
A_4.9V(VDD2)
REC_Y/MT_CONT
REC_L_CONT
MT_F0
REC_BIAS
ACC/RF_CONT
CFG_DUTY
1.5M_DEV
AU_BPF
1.7M_DEV
A_FADE
D_3.2V(VDD1)
GND
CLK
DI
DOC_DET
RF_AGC_CONT
RP_IR
AFC_F0_ADJ
FRQ_TUNE
AGC_CONT2
MT_Q
HALL_REF
HALL_GAIN
HALL_OFFSET
SWP(SEL)
STB(LD)
MT_CONT
RF_ENV_LEVEL
MT_F0
IR_CARR
IR_A_DEV
CFG_DUTY
1.5M_DEV
AU_BPF
1.7M_DEV
ZOOM_MIC_CONT
FB2291 0uH
C2291 1u B
C2292 0.01u B
C2293 22u 6.3V
L2291 10uH
XVC_SCK
VC_SO
DOC_DET
RP_IR
AFC_F0_ADJ
FRQ_TUNE
IR_V_DEV
MT_Q
HALL_REF
HALL_GAIN
HALL_OFFSET
VC_RF_SWP
DA_STB
RP_IR
MT_CONT
MT_F0
DOC_DET
MT_Q
RF_ENV_LEVEL
CFG_DUTY
VC_SO
XVC_SCK
DA_STB
VC_RF_SWP
92 TO(9/18)
124 TO(14/18)
119 TO(11/18)
77 TO(7/18)
IR_VIDEO
24 TO(3/18)
128 TO(15/18)
IR_L
IR_R
FRQ_TUNE
ZOOM_MIC_CONT
1.5M_DEV
1.7M_DEV
AU_BPF
4 TO(1/18)
125 TO(16/18)
126 TO(15/18)
IR_CARR
IR_V_DEV
IR_A_DEV
AFC_F0_ADJ
15 TO(2/18)
32 TO(4/18)
102 TO(10/18)
IR_FSC
IR_ON
SIRCS_PWM
IC3901
IR DRIVE
IC3901 LA9511WL-TBM
CLAMP C1
NC
V DEV ADJ
NC
V IN
REG
NC
REF
A DEV ADJ
Lch IN
ALC C
Rch IN
CLAMP C2
CAR ADJ
PRE EM IN
PRE EM OUT
VCC
VCC
NC
V GND
V GND
HPF OUT
V REF
VRF IN
DRV CL OUT
NC
DRV EM OUT
DRV SW
MIX OUT
NC
MIX IN
NC
VRF OUT
ARF OUT
STBY
CHUP C
BAND SEL
REF R
[ALC OUT Lch]
Xtal SEL
[ALC OUT Rch]
[OSC OUT]
Xtal IN
A GND
A GND
LPF L
LPF R
OSC VCC
37
38
39
Q3903 2SA1774HT2L SWITCH
Q3902 2SA1226-T1E4 BUFFER
AU_2.8V
A_4.75V
A_2.8V
REG_GND
144 TO(18/18)
IR_DRV_EM
145 TO(17/18(CN1116))
L3901 10uH
R3940 0
R3941 XX
L3902 5.6uH
L3903 33uH
L3904 33uH
R3908 12k
R3903 33k
R3904 4700
R3905 33k
R3942 XX
R3943 12k
R3909 1M
R3911 22k ± 0.5%
R3912 330
R3913 1k
R3949 XX
R3916 470
R3917 150k
R3918 150k
R3919 560
R3920 6800
R3921 470
R3922 39k
R3923 470
R3924 470
R3936 1500
R3939 0
R3948 XX
C3901 XX
C3902 10u 4V
C3903 10u 6.3V
C3904 0.01u B
C3905 0.47u B
C3906 0.47u B
C3908 1u B
C3909 0.01u B
C3910 4.7u 6.3V
C3911 0.01u B
C3912 0.01u B
C3913 510p CH
C3914 10u 6.3V
C3915 0.01u B
C3916 1u B
C3917 0.1u B
C3918 4p CH
C3919 0.47u B
C3920 0.47u B
C3921 33p CH
C3922 1u B
C3923 39p CH
C3924 1u B
C3925 0.1u B
C3926 0.01u B
C3927 0.01u B
C3928 22u 4V
C3934 1u B
C3935 0.01u B
C3936 0.01u B
IR_CARR
IR_V_DEV
IR_A_DEV

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB			⇨	⇨

For Schematic Diagram

- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveforms.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H I
VC-254 BOARD(13/18)
DIGITAL8 MECHA CONTROL(MC BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC4501
MECHANISM CONTROL
IC4501
MB91192PFF-G-133-BND-ER
IC4502
EEPROM
IC4502
AK6417AM-E2
XCS
XSCK
DI
DO
Vcc
XBUSY
RST
GND
REG_GND
D_2.8V
FB4501
0uH
TO(18/18)
TO(11/18,14/18)
TO(14/18)
TO(5/18,8/18,10/18,11/18,17/18(CN1117))
TO(8/18,10/18,11/18,17/18(CN1104))
TO(10/18)
TO(7/18)
TO(4/18,15/18,17/18(CN1104))
TO(15/18)
TO(17/18(CN1104))
TO(11/18)
TO(17/18(CN1116))
TO(4/18,17/18(CN1108))
TO(2/18,8/18,17/18(CN1104))
TO(4/18,17/18(CN1104))
TO(4/18)
TO(6/18)
TO(9/18)
TO(17/18(CN1108))
MODE_SW_A
MODE_SW_B
MODE_SW_C
CAP_ON
CAP_FWD
CAP_PWM
CAP_FG
DRUM_ON
DRUM_START
DRUM_PWM
DRUM_FG
DRUM_PG
LOAD
UNLOAD
TAPE_LED_ON
TAPE_TOP
TAPE_END
DEW_AD
SREEL_FG
TREEL_FG
XREEL_HALL_ON
REC_PROOF_SW
RSAT
LM_LIM_ON
LM_LIM_DET
DRUM_8PB
XHI_SCK
HI_SO
HI_SI
XCS_MECHA
XSYS_RST
XVSP_SCK
VSP_SO
VSP_SI
XCS_AU
XCS_HONEY
AUDIO_MUTE
XCS_TAKO
SDC_IN
XVIDEO_IN
DEM0
DEM1
XPWAD
XPWDA
XTAL20M
X0
HP_JACK_IN
SWP
IFI_VD
VFI_OE
VREF
TRRV
XCS_SFD
WRX
RDX
FRRV
TRRT
DRP
ALE
XDVCN
XRST_LINK
XRST_PHY
LIP_SLEEP
LPS
OFR
XRST_VSP
XCS_VFD
MCDA0
MCDA1
MCDA2
MCDA3
MCDA4
MCDA5
MCDA6
MCDA7
MCHA0
MCHA1
MCCE
SCOD_WINDOW
ATF_ERR
REC_CRRT0
REC_CRRT1
XFE_ON
DV_RF_SWP
XDRP_SCK
DRP_SO
DRUM_8PB
XCS_TRF
RF_ENV_DET
DV_RF_SWP
C4501
0.001u
RB4501
100k
C4509
0.01u
R4507
1k
R4508
470k
C4508
0.01u
R4530
470
C4504
1u
C4505
0.01u
R4514
100k
R4503
100k
C4506
0.01u
C4507
0.01u
R4527
100k
R4523
470k
R4520
1k
R4524
100k
RB4502
100k
R4526
470k
R4521
10k
R4522
10k
C4510
0.01u
CL4503
CL4504
CL4505
CL4506
XCS_MC_FLASH
MC_F_BUSY
32
31
16

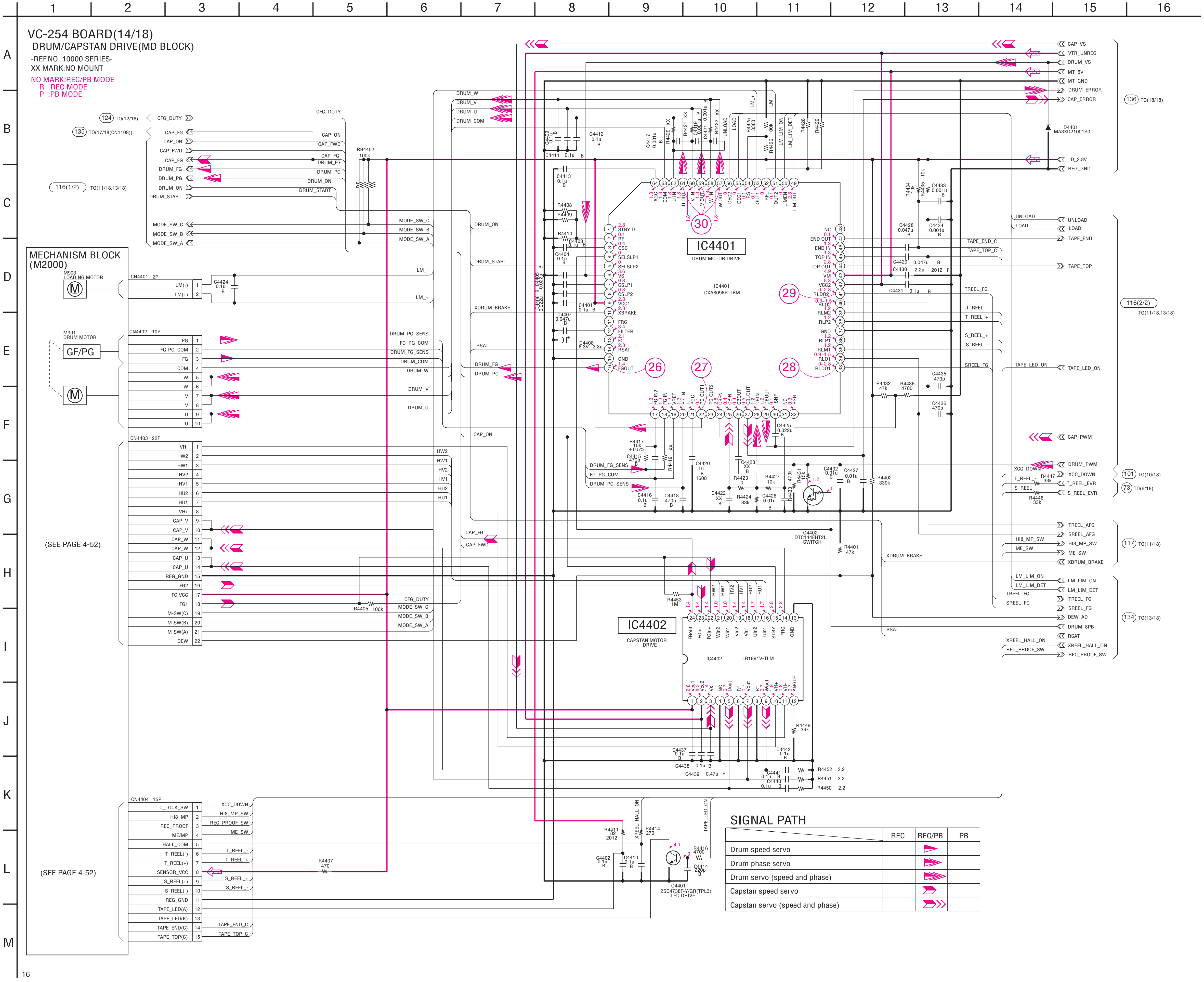
SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶	
Drum servo (speed and phase)		▶	
Capstan speed servo		▶	
Capstan servo (speed and phase)		▶	

DIGITAL8 MECHA CONTROL
VC-254 (13/18)

For Schematic Diagram

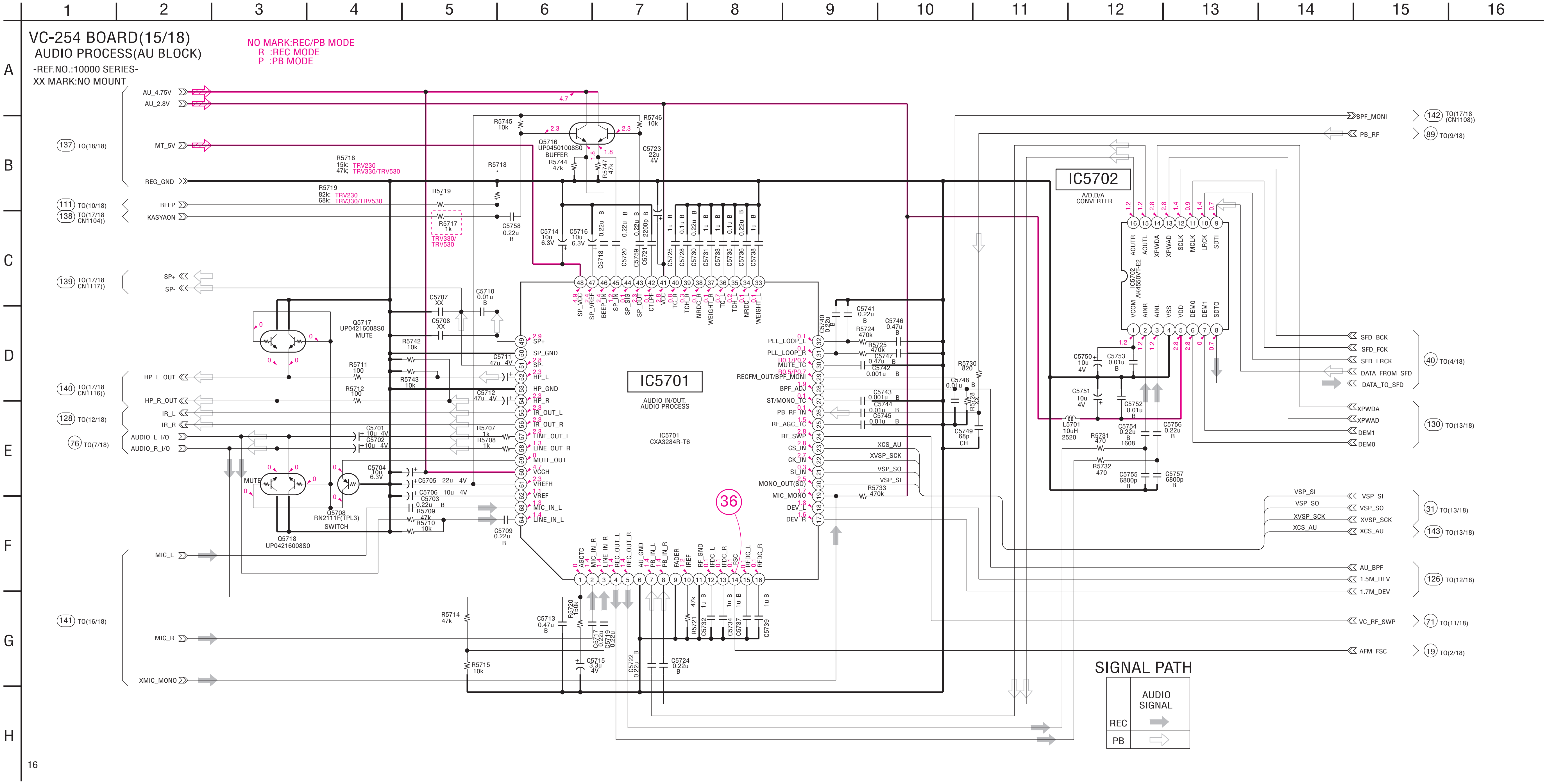
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveforms.


VC-254 BOARD(14/18)
DRUM/CAPSTAN DRIVE(MD BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
MECHANISM BLOCK (M2000)
M903 LOADING MOTOR
M901 DRUM MOTOR
GF/PG
(SEE PAGE 4-52)
CN4401 2P
CN4402 10P
CN4403 22P
CN4404 15P
IC4401
DRUM MOTOR DRIVE
IC4401 CXA8096R-TBM
IC4402
CAPSTAN MOTOR DRIVE
IC4402 LB1991V-TLM
Q4401 2SC4738F-Y/GR(TPL3) LED DRIVE
Q4402 DTC144EHT2L SWITCH
D4401 MA3XD21001S0
TO(12/18)
TO(17/18(CN1108))
TO(11/18,13/18)
TO(18/18)
TO(11/18,13/18)
TO(10/18)
TO(6/18)
TO(11/18)
TO(13/18)
CAP_VS
VTR_UNREG
DRUM_VS
MT_5V
MT_GND
DRUM_ERROR
CAP_ERROR
D_2.8V
REG_GND
UNLOAD
LOAD
TAPE_END
TAPE_TOP
TAPE_LED_ON
CAP_PWM
DRUM_PWM
XCC_DOWN
T_REEL_EVR
S_REEL_EVR
TREEL_AFG
SREEL_AFG
HI8_MP_SW
ME_SW
XDRUM_BRAKE
LM_LIM_ON
LM_LIM_DET
TREEL_FG
SREEL_FG
DEW_AD
DRUM_8PB
RSAT
XREEL_HALL_ON
REC_PROOF_SW
CFG_DUTY
CAP_FG
CAP_ON
CAP_FWD
DRUM_FG
DRUM_PG
DRUM_ON
DRUM_START
MODE_SW_C
MODE_SW_B
MODE_SW_A
16

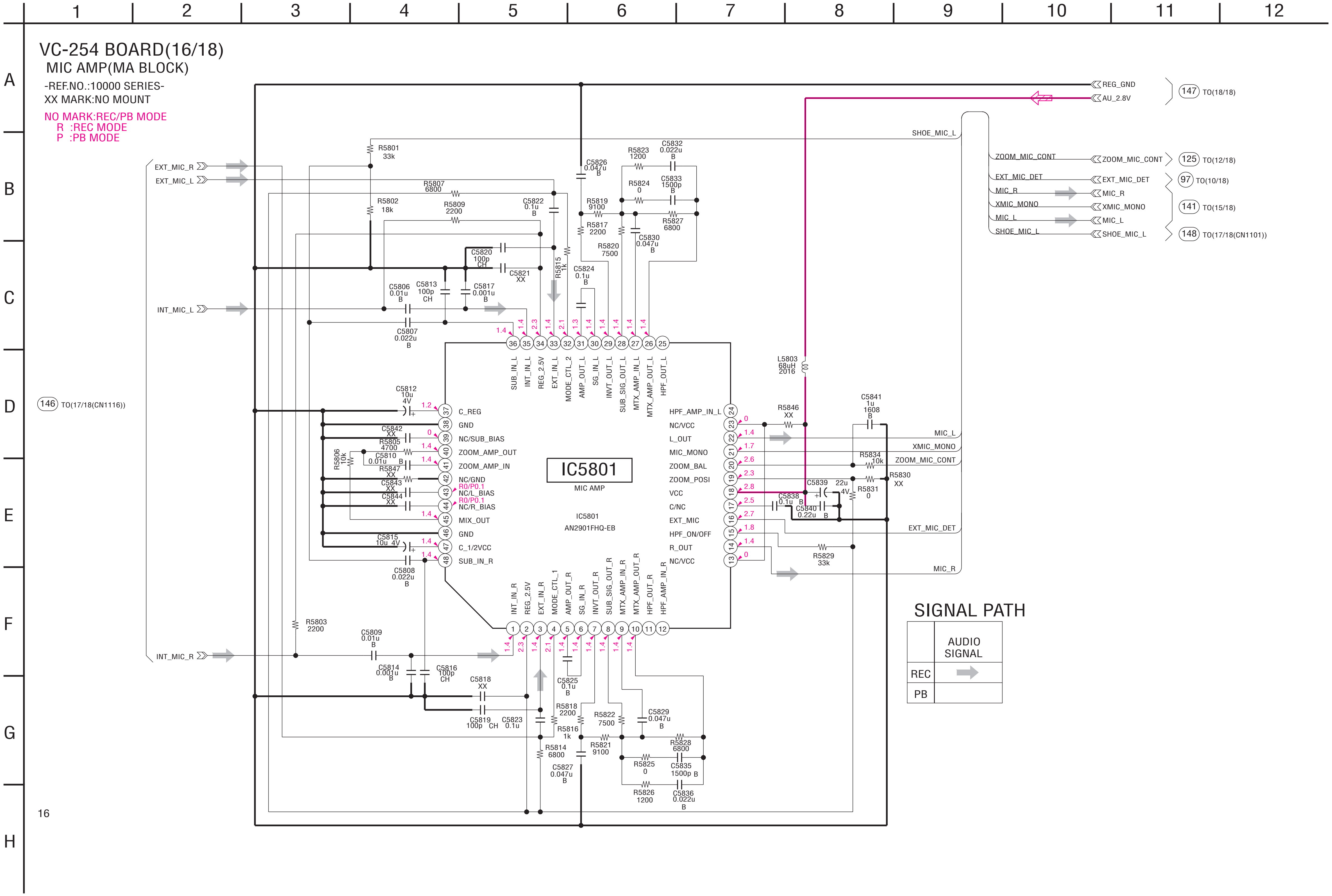
SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶	
Drum servo (speed and phase)		▶	
Capstan speed servo		▶	
Capstan servo (speed and phase)		▶	

For Schematic Diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveform.

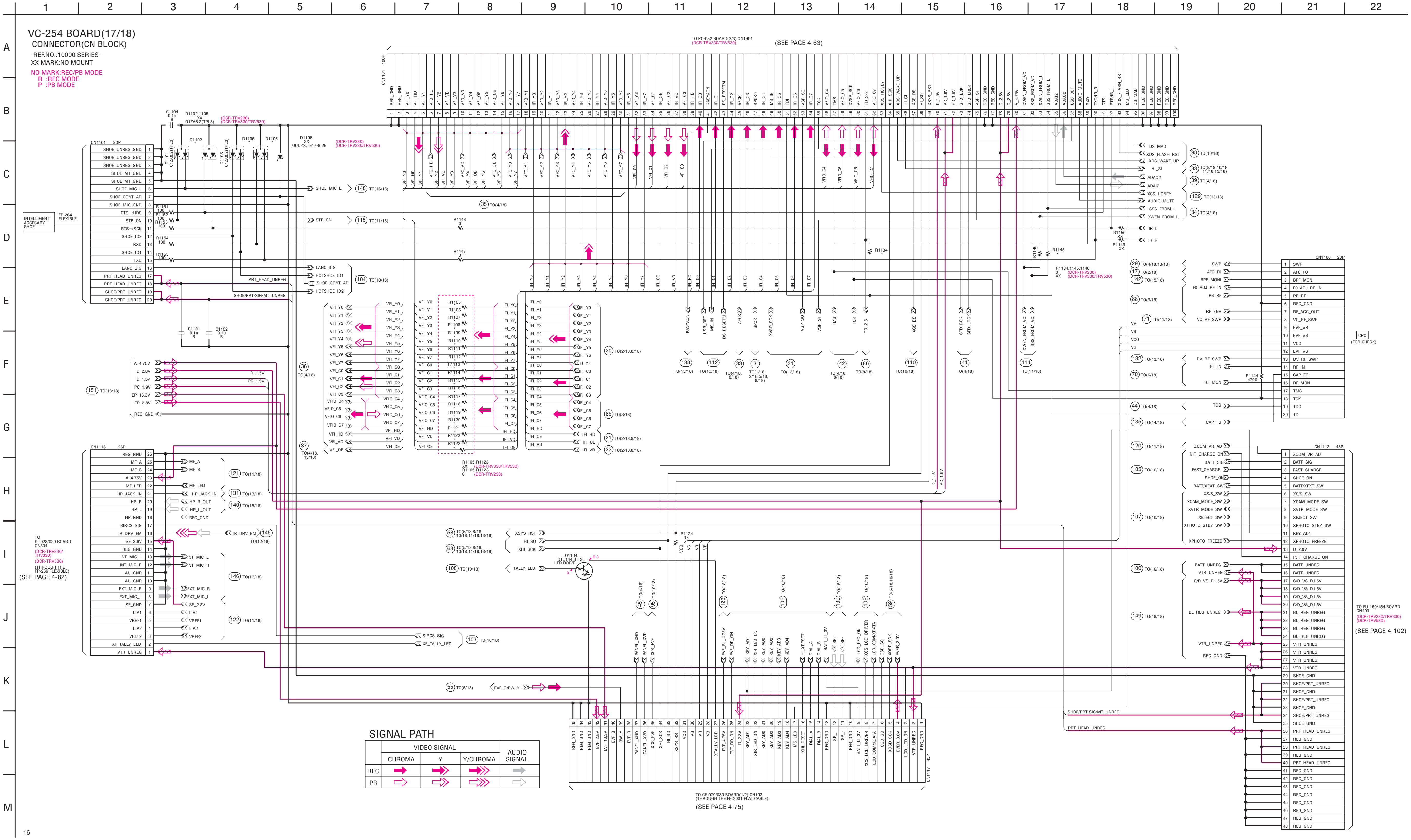

VC-254 BOARD(15/18)
AUDIO PROCESS(AU BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC5701
AUDIO IN/OUT, AUDIO PROCESS
IC5701 CXA3284R-T6
IC5702
A/D,D/A CONVERTER
IC5702 AK4550VT-E2
Q5716 UP04501008S0 BUFFER
Q5717 UP04216008S0 MUTE
Q5718 UP04216008S0
Q5708 RN2111F(TPL3) SWITCH
AU_4.75V
AU_2.8V
MT_5V
REG_GND
BEEP
KASYAON
SP+
SP-
HP_L_OUT
HP_R_OUT
IR_L
IR_R
AUDIO_L_I/O
AUDIO_R_I/O
MIC_L
MIC_R
XMIC_MONO
BPF_MONI
PB_RF
SFD_BCK
SFD_FCK
SFD_LRCK
DATA_FROM_SFD
DATA_TO_SFD
XPWDA
XPWAD
DEM1
DEM0
VSP_SI
VSP_SO
XVSP_SCK
XCS_AU
AU_BPF
1.5M_DEV
1.7M_DEV
VC_RF_SWP
AFM_FSC
36
SIGNAL PATH
AUDIO SIGNAL
REC
PB
16

For Schematic Diagram
- Refer to page 4-11 for printed wiring board.


1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H
VC-254 BOARD(16/18)
MIC AMP(MA BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
REG_GND
AU_2.8V
147 TO(18/18)
SHOE_MIC_L
ZOOM_MIC_CONT
EXT_MIC_DET
MIC_R
XMIC_MONO
MIC_L
125 TO(12/18)
97 TO(10/18)
141 TO(15/18)
148 TO(17/18(CN1101))
EXT_MIC_R
EXT_MIC_L
INT_MIC_L
INT_MIC_R
146 TO(17/18(CN1116))
IC5801
MIC AMP
IC5801
AN2901FHQ-EB
SUB_IN_L
INT_IN_L
REG_2.5V
EXT_IN_L
MODE_CTL_2
AMP_OUT_L
SG_IN_L
INVT_OUT_L
SUB_SIG_OUT_L
MTX_AMP_IN_L
MTX_AMP_OUT_L
HPF_OUT_L
C_REG
GND
NC/SUB_BIAS
ZOOM_AMP_OUT
ZOOM_AMP_IN
NC/GND
NC/L_BIAS
NC/R_BIAS
MIX_OUT
GND
C_1/2VCC
SUB_IN_R
HPF_AMP_IN_L
NC/VCC
L_OUT
MIC_MONO
ZOOM_BAL
ZOOM_POSI
VCC
C/NC
EXT_MIC
HPF_ON/OFF
R_OUT
NC/VCC
INT_IN_R
REG_2.5V
EXT_IN_R
MODE_CTL_1
AMP_OUT_R
SG_IN_R
INVT_OUT_R
SUB_SIG_OUT_R
MTX_AMP_IN_R
MTX_AMP_OUT_R
HPF_OUT_R
HPF_AMP_IN_R
R5801 33k
R5802 18k
R5807 6800
R5809 2200
C5822 0.1u B
C5826 0.047u B
R5823 1200
C5832 0.022u B
R5824 0
C5833 1500p B
R5819 9100
R5817 2200
R5827 6800
C5830 0.047u B
R5820 7500
C5820 100p CH
C5821 XX
R5815 1k
C5824 0.1u B
C5806 0.01u B
C5813 100p CH
C5817 0.001u B
C5807 0.022u B
C5812 10u 4V
C5842 XX
R5805 4700
R5806 10k
C5810 0.01u B
R5847 XX
C5843 XX
C5844 XX
C5815 10u 4V
C5808 0.022u B
R0/P0.1
L5803 68uH 2016
R5846 XX
C5841 1u 1608 B
R5834 10k
R5830 XX
C5839 22u 4V
R5831 0
C5838 0.1u B
C5840 0.22u B
R5829 33k
MIC_L
XMIC_MONO
ZOOM_MIC_CONT
EXT_MIC_DET
MIC_R
R5803 2200
C5809 0.01u B
C5814 0.001u B
C5816 100p CH
C5818 XX
C5819 100p CH
C5823 0.1u
C5825 0.1u B
R5818 2200
R5816 1k
R5814 6800
C5827 0.047u B
R5822 7500
R5821 9100
C5829 0.047u B
R5828 6800
R5825 0
C5835 1500p B
R5826 1200
C5836 0.022u B
16
SIGNAL PATH
AUDIO SIGNAL
REC
PB

For Schematic Diagram

- Refer to page 4-11 for printed wiring board.

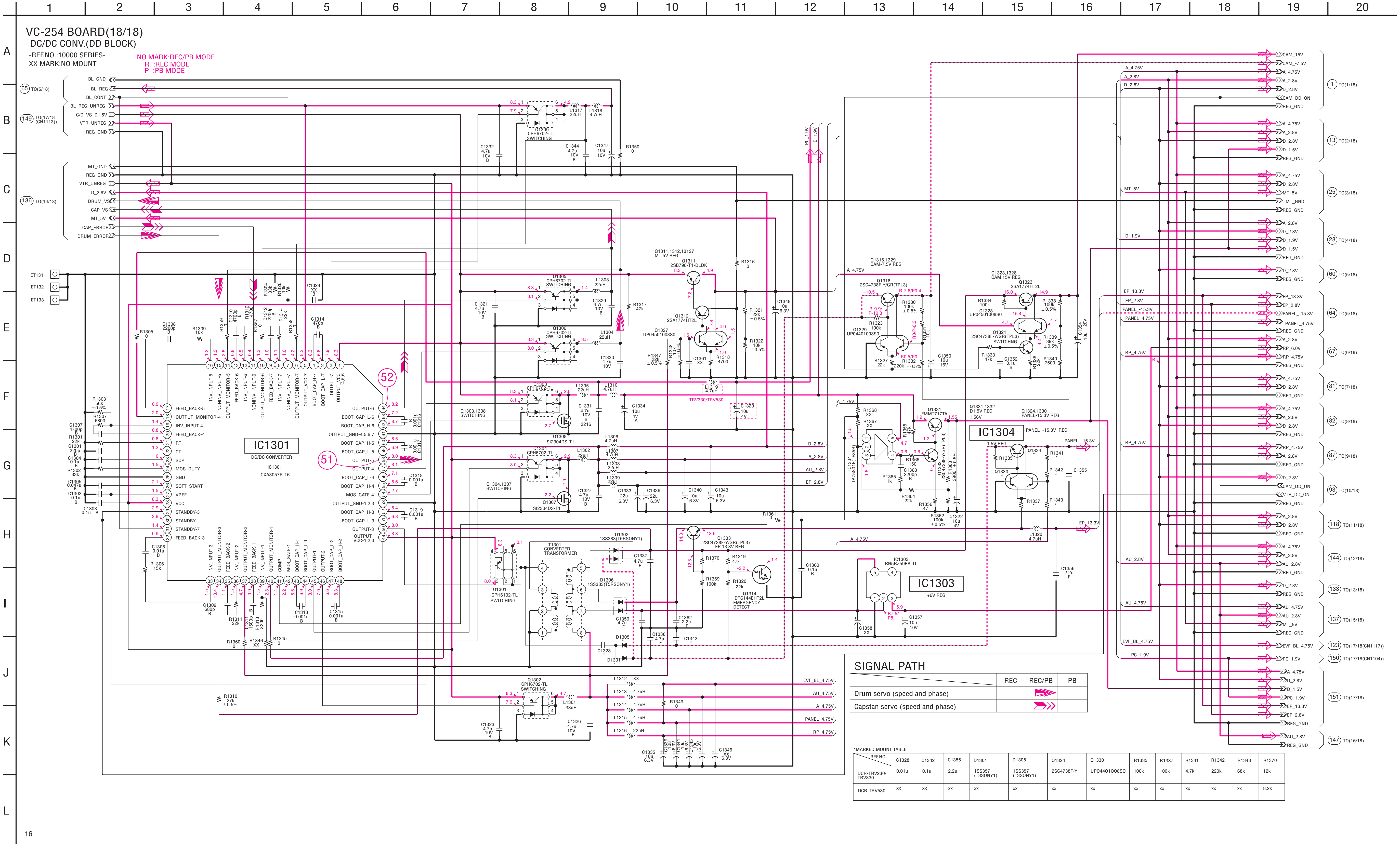

VC-254 BOARD(17/18)
CONNECTOR(CN BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
TO PC-082 BOARD(3/3) CN1901
(DCR-TRV330/TRV530)
(SEE PAGE 4-63)
CN1104 100P
CN1101 20P
INTELLIGENT ACCESARY SHOE
FP-264 FLEXIBLE
CN1116 26P
TO SI-028/029 BOARD CN304
(DCR-TRV230/TRV330)
(DCR-TRV530)
(THROUGH THE FP-266 FLEXIBLE)
(SEE PAGE 4-82)
CN1108 20P
CPC (FOR CHECK)
CN1113 48P
TO FU-150/154 BOARD CN403
(DCR-TRV230/TRV330)
(DCR-TRV530)
(SEE PAGE 4-102)
Q1104 DTC144EHT2L LED DRIVE
CN1117 45P
TO CF-079/080 BOARD(1/2) CN102
(THROUGH THE FFC-001 FLAT CABLE)
(SEE PAGE 4-75)
16

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

For Schematic Diagram

- Refer to page 4-11 for printed wiring board.
- Refer to page 4-104 for waveforms.


VC-254 BOARD(18/18)
DC/DC CONV.(DD BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC1301
DC/DC CONVERTER
IC1301
CXA3057R-T6
IC1304
IC1303
+6V REG
IC1303
RN5RZ59BA-TL
T1301
CONVERTER
TRANSFORMER
Q1301
CPH6102-TL
SWITCHING
Q1302
CPH6702-TL
SWITCHING
Q1311,1312,13127
MT 5V REG
Q1316,1329
CAM -7.5V REG
Q1323,1328
CAM 15V REG
Q1331,1332
D1.5V REG
Q1324,1330
PANEL-15.3V REG
Q1314
DTC144EHT2L
EMERGENCY
DETECT
Q1333
2SC4738F-Y/GR(TPL3)
EP 13.3V REG
TRV330/TRV530
51
52
65 TO(5/18)
149 TO(17/18)(CN1113)
136 TO(14/18)
1 TO(1/18)
13 TO(2/18)
25 TO(3/18)
28 TO(4/18)
60 TO(5/18)
64 TO(5/18)
67 TO(6/18)
81 TO(7/18)
82 TO(8/18)
87 TO(9/18)
93 TO(10/18)
118 TO(11/18)
144 TO(12/18)
133 TO(13/18)
137 TO(15/18)
123 TO(17/18)(CN1117)
150 TO(17/18)(CN1104)
151 TO(17/18)
147 TO(16/18)
16

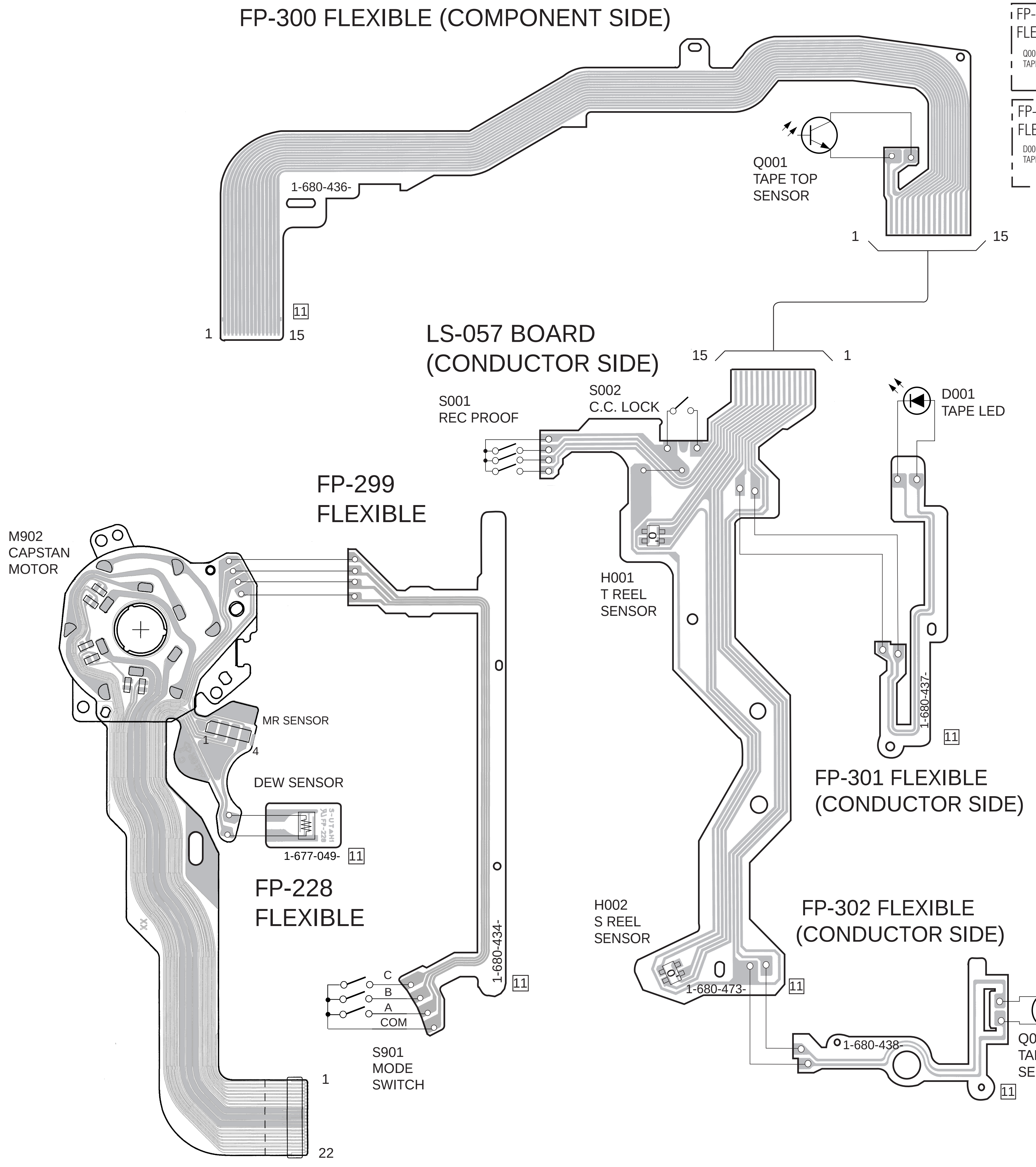
SIGNAL PATH

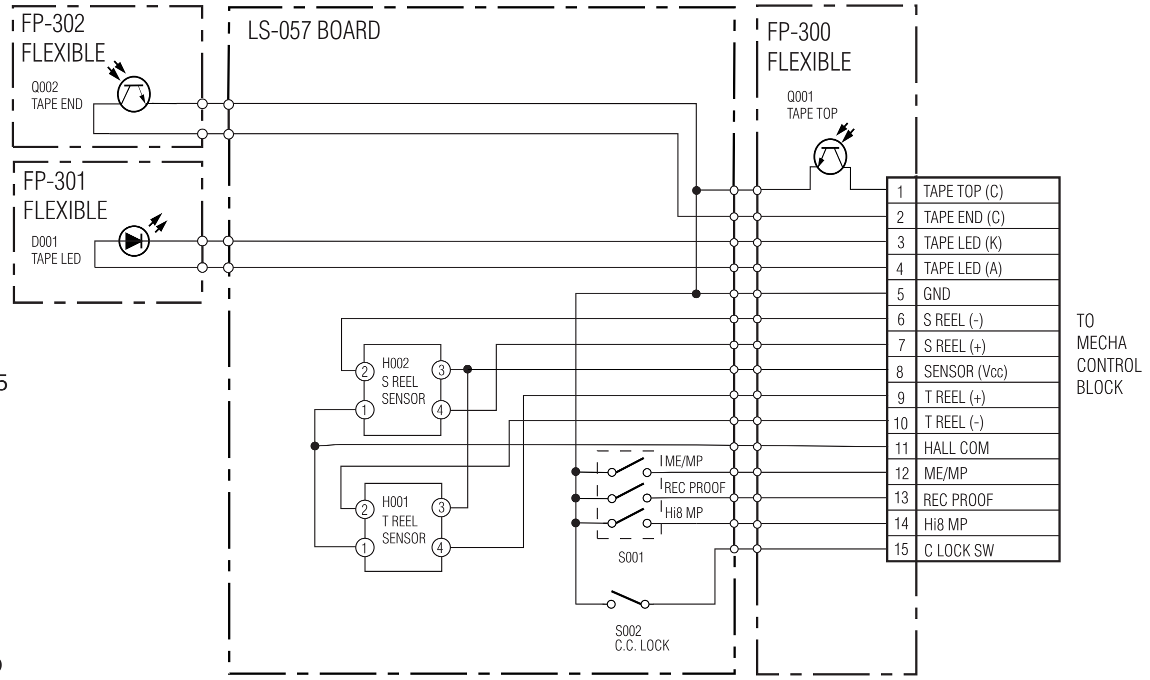
	REC	REC/PB	PB
Drum servo (speed and phase)		⇛	
Capstan servo (speed and phase)		➤»	

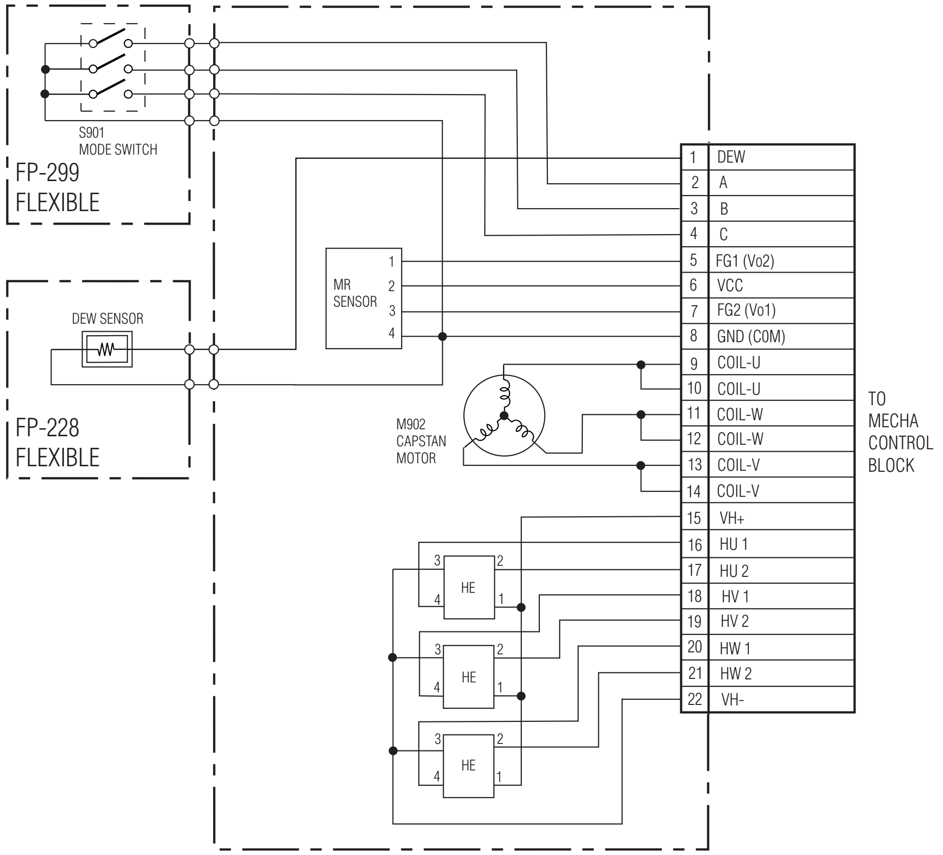
*MARKED:MOUNT TABLE

REF.NO.	C1328	C1342	C1355	D1301	D1305	Q1324	Q1330	R1335	R1337	R1341	R1342	R1343	R1370
DCR-TRV230/ TRV330	0.01u	0.1u	2.2u	1SS357 (T3SONY1)	1SS357 (T3SONY1)	2SC4738F-Y	UP04401008S0	100k	100k	4.7k	220k	68k	12k
DCR-TRV530	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	8.2k

LS-057 (S/T REEL SENSOR), FP-228 (DEW SENSOR), FP-229 (MODE SWITCH), FP-300 (TAPE TOP), FP-302 (TAPE END), FP-301 (TAPE LED) FLEXIBLE BOARDS


FP-300 FLEXIBLE (COMPONENT SIDE)
1-680-436-
Q001
TAPE TOP
SENSOR
1
15
11
1
15
LS-057 BOARD
(CONDUCTOR SIDE)
15
1
S001
REC PROOF
S002
C.C. LOCK
D001
TAPE LED
FP-299
FLEXIBLE
M902
CAPSTAN
MOTOR
H001
T REEL
SENSOR
MR SENSOR
1
4
DEW SENSOR
1-677-049-
11
FP-228
FLEXIBLE
1-680-434-
11
1-680-437-
11
FP-301 FLEXIBLE
(CONDUCTOR SIDE)
H002
S REEL
SENSOR
1-680-473-
11
FP-302 FLEXIBLE
(CONDUCTOR SIDE)
C
B
A
COM
S901
MODE
SWITCH
1
22
1-680-438-
Q002
TAPE END
SENSOR
11


FP-302
FLEXIBLE
Q002
TAPE END
FP-301
FLEXIBLE
D001
TAPE LED
LS-057 BOARD
FP-300
FLEXIBLE
Q001
TAPE TOP
H002
S REEL
SENSOR
H001
T REEL
SENSOR
ME/MP
REC PROOF
Hi8 MP
S001
S002
C.C. LOCK
1 TAPE TOP (C)
2 TAPE END (C)
3 TAPE LED (K)
4 TAPE LED (A)
5 GND
6 S REEL (-)
7 S REEL (+)
8 SENSOR (Vcc)
9 T REEL (+)
10 T REEL (-)
11 HALL COM
12 ME/MP
13 REC PROOF
14 Hi8 MP
15 C LOCK SW
TO
MECHA
CONTROL
BLOCK


S901
MODE SWITCH
FP-299
FLEXIBLE
DEW SENSOR
FP-228
FLEXIBLE
MR
SENSOR
M902
CAPSTAN
MOTOR
HE
HE
HE
1 DEW
2 A
3 B
4 C
5 FG1 (Vo2)
6 VCC
7 FG2 (Vo1)
8 GND (COM)
9 COIL-U
10 COIL-U
11 COIL-W
12 COIL-W
13 COIL-V
14 COIL-V
15 VH+
16 HU 1
17 HU 2
18 HV 1
19 HV 2
20 HW 1
21 HW 2
22 VH-
TO
MECHA
CONTROL
BLOCK

For printed wiring boards

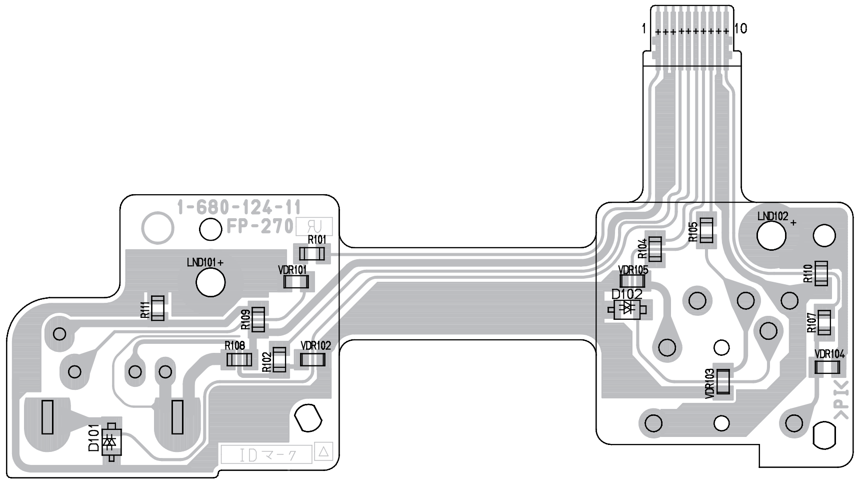
There are a few cases that the part printed on this diagram isn't mounted in this model.

FP-270 (S VIDEO, AUDIO/VIDEO), FP-272 (LANC, DV IN/OUT) FLEXIBLE BOARDS

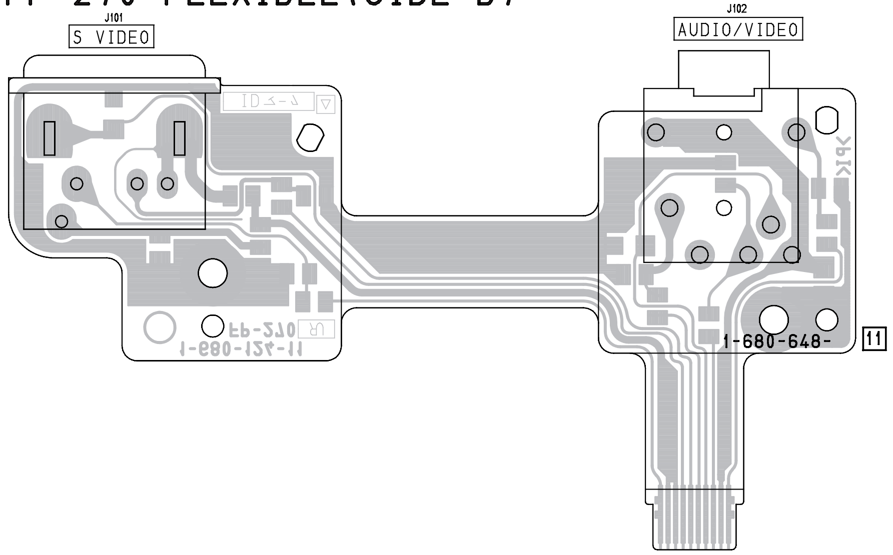
— Ref. No. FP-270, FP-272 Flexible Boards; 30,000 Series —

- Refer to page 4-27 for schematic diagram.

FP-270 FLEXIBLE(SIDE A)

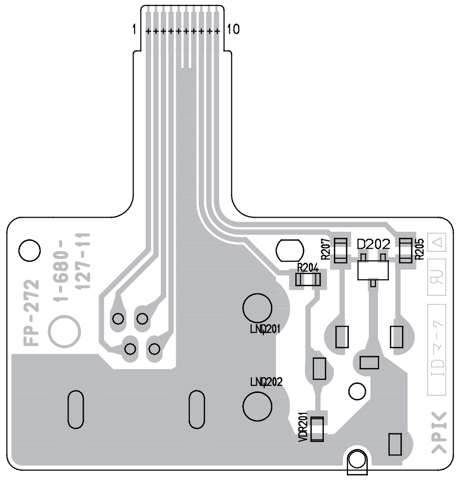

1
10
1-680-124-11
FP-270
R101
LND101
VDR101
R111
R109
R108
R102
VDR102
D101
LND102
R104
R105
VDR105
D102
R110
R107
VDR104
VDR103

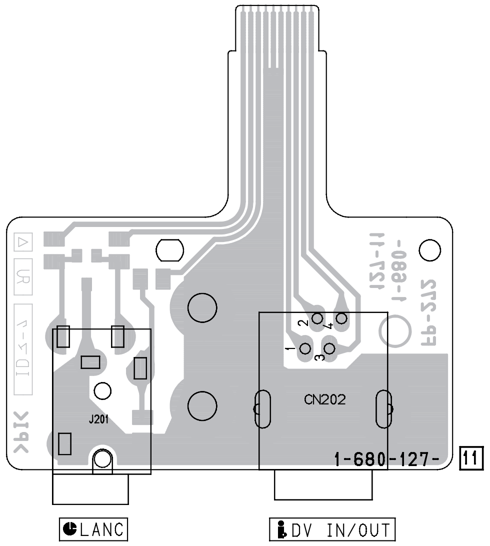
FP-270 FLEXIBLE(SIDE B)


J101
S VIDEO
J102
AUDIO/VIDEO
FP-270
1-680-648-
11

- Refer to page 4-24 for schematic diagram.

FP-272 FLEXIBLE(SIDE A) FP-272 FLEXIBLE(SIDE B)

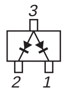

1
10
FP-272
1-680-127-11
R207
D202
R206
R204
LND201
LND202
VDR201


FP-272
1-680-127-11
J201
CN202
1
2
3
4
1-680-127-
11
LANC
DV IN/OUT

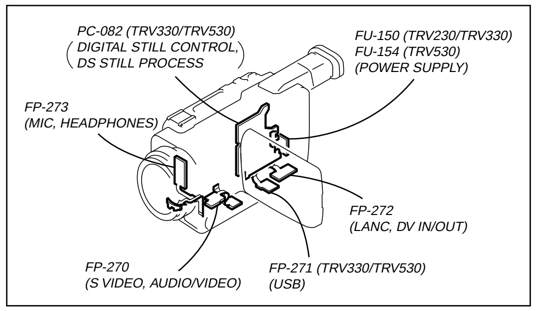
For printed wiring boards

- Chip parts

Diode

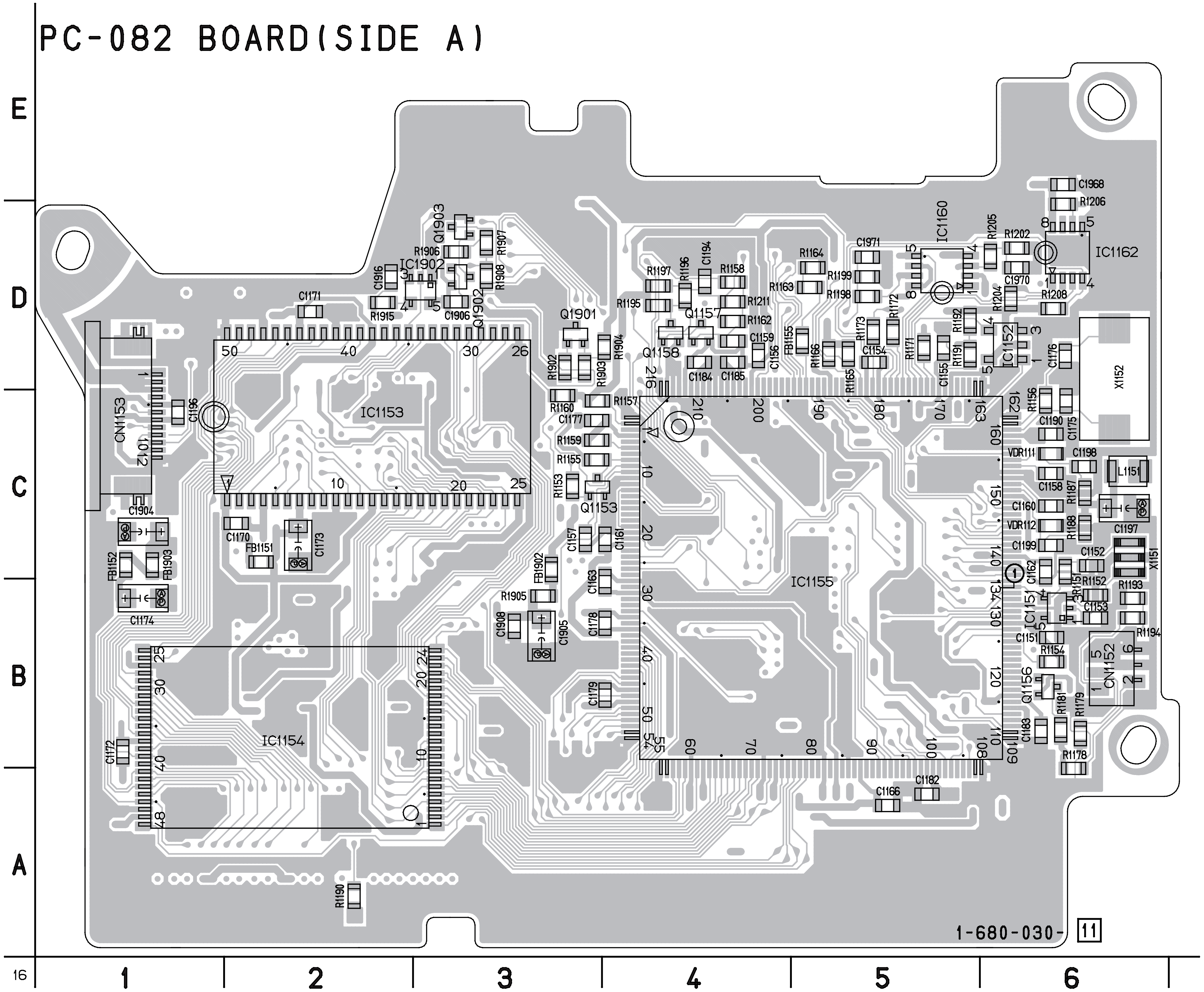


There are a few cases that the part printed on this diagram isn't mounted in this model.


PC-082 (TRV330/TRV530)
(DIGITAL STILL CONTROL, DS STILL PROCESS)
FU-150 (TRV230/TRV330)
FU-154 (TRV530)
(POWER SUPPLY)
FP-273
(MIC, HEADPHONES)
FP-272
(LANC, DV IN/OUT)
FP-270
(S VIDEO, AUDIO/VIDEO)
FP-271 (TRV330/TRV530)
(USB)

PC-082 (DIGITAL STILL CONTROL, DS STILL PROCESS) PRINTED WIRING BOARD

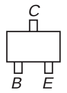
— Ref. No. PC-082 Board; 20,000 Series —


PC-082 BOARD(SIDE A)
E
D
C
B
A
16
1
2
3
4
5
6
1-680-030-11
IC1153
IC1154
IC1155
IC1160
IC1162
IC1152
IC1151
IC1902
CN1153
CN1152
X1152
X1151
L1151
Q1901
Q1902
Q1903
Q1153
Q1156
Q1157
Q1158
FB1151
FB1152
FB1155
FB1902
FB1903
VDR111
VDR112
C1171
C1196
C1904
C1170
C1173
C1174
C1172
C1916
C1906
C1908
C1905
C1157
C1161
C1163
C1178
C1179
C1177
C1184
C1185
C1159
C1156
C1154
C1155
C1176
C1175
C1190
C1198
C1158
C1160
C1199
C1197
C1152
C1162
C1153
C1151
C1183
C1166
C1182
C1194
C1971
C1970
C1968
R1915
R1906
R1907
R1908
R1902
R1903
R1904
R1160
R1157
R1159
R1155
R1153
R1905
R1195
R1197
R1196
R1158
R1211
R1162
R1163
R1164
R1199
R1198
R1172
R1173
R1166
R1165
R1171
R1192
R1191
R1205
R1202
R1204
R1206
R1208
R1156
R1187
R1188
R1152
R1193
R1194
R1154
R1181
R1179
R1178
R1190
50
40
30
26
10
20
25
1
216
210
200
190
180
170
163
162
160
150
140
134
130
120
110
109
108
100
90
80
70
60
55
54
48
24
8
5
4
3
2
6

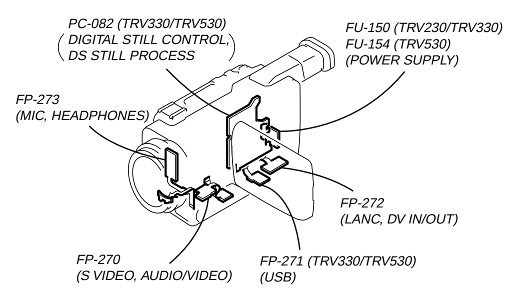
For printed wiring boards

- Refer to page 4-109 for parts location.
- PC-082 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

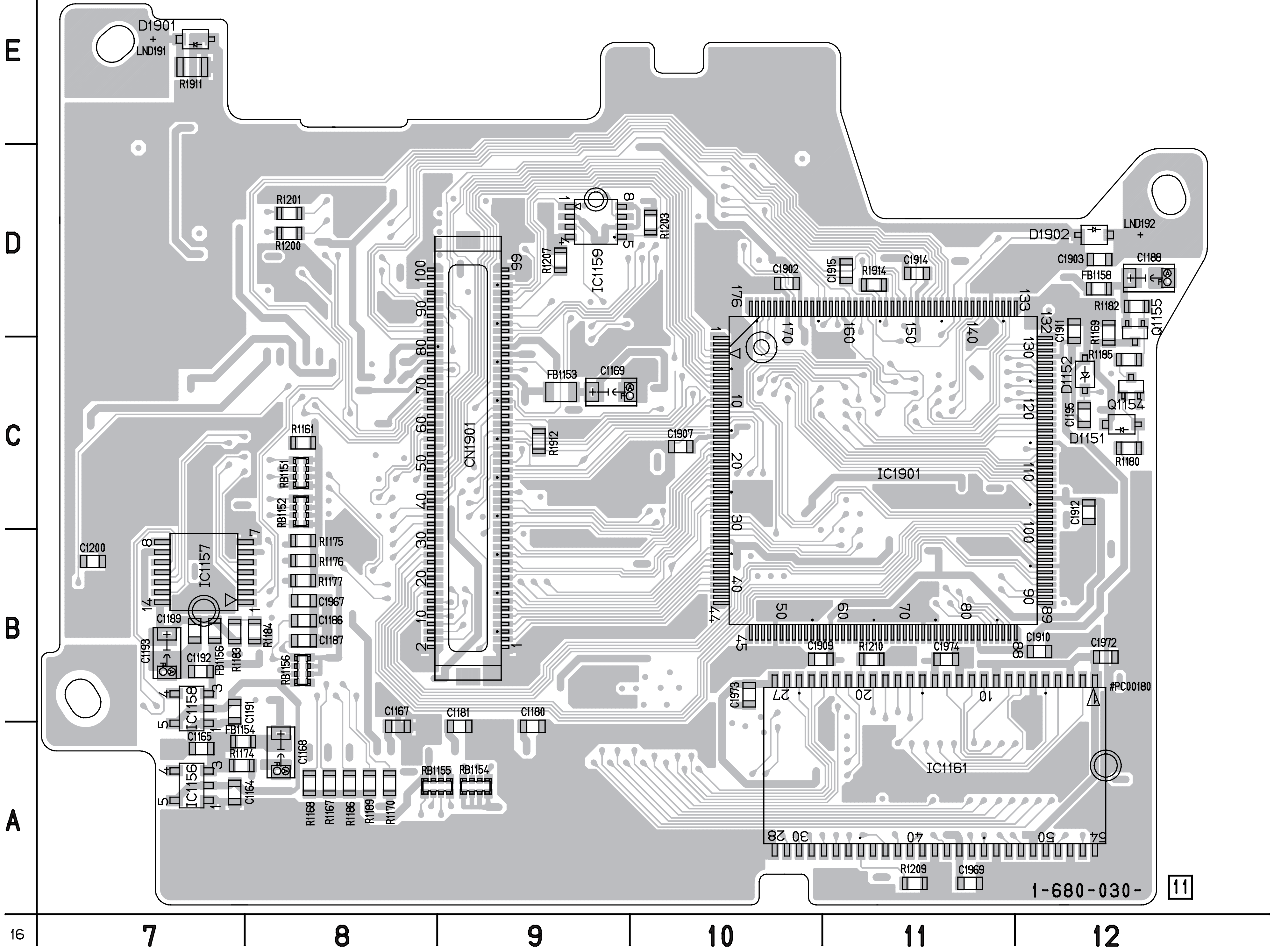
Transistor



There are a few cases that the part printed on this diagram isn’t mounted in this model.

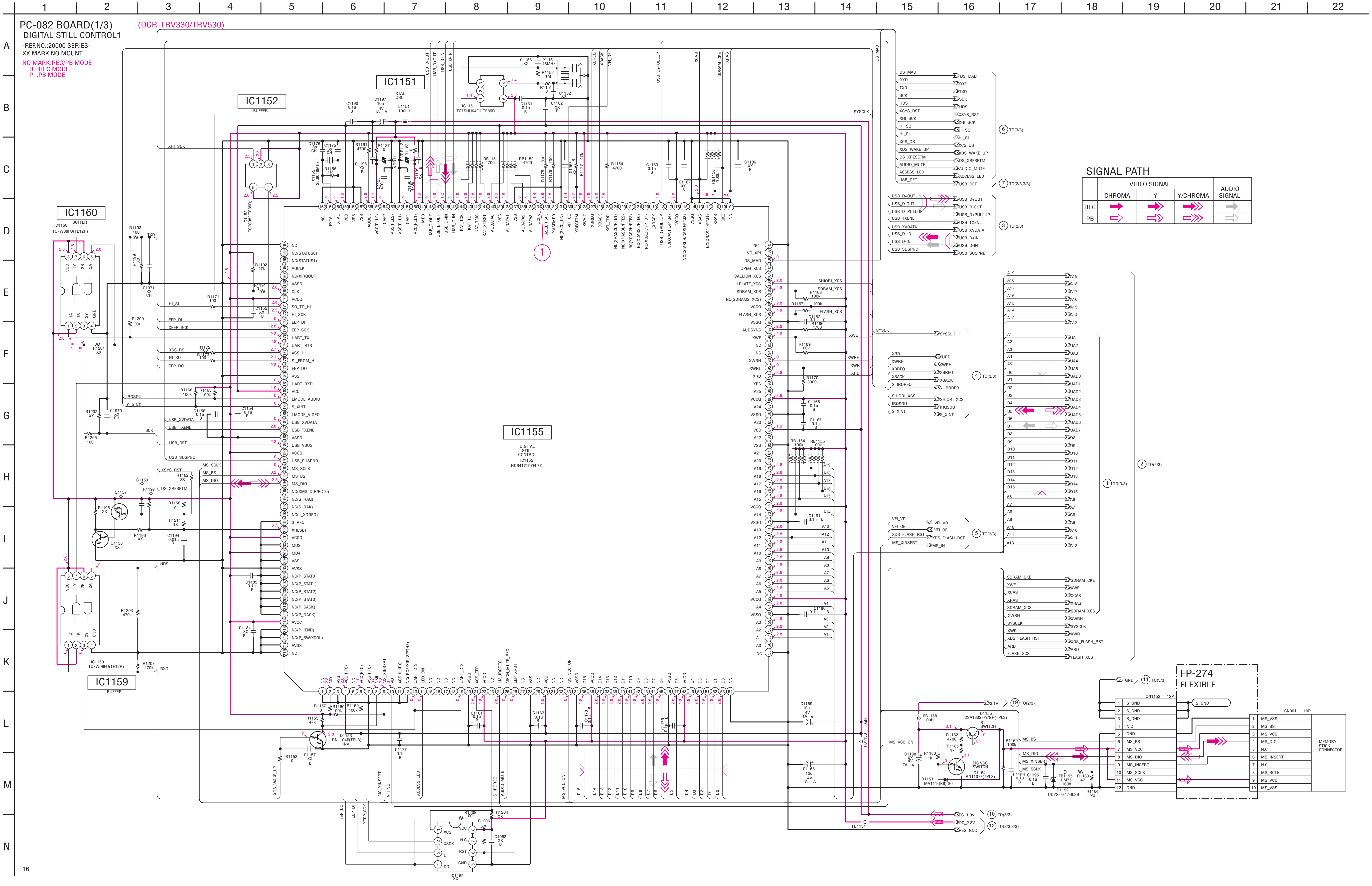

PC-082 (TRV330/TRV530)
(DIGITAL STILL CONTROL, DS STILL PROCESS)
FU-150 (TRV230/TRV330)
FU-154 (TRV530)
(POWER SUPPLY)
FP-273
(MIC, HEADPHONES)
FP-272
(LANC, DV IN/OUT)
FP-270
(S VIDEO, AUDIO/VIDEO)
FP-271 (TRV330/TRV530)
(USB)

PC-082 BOARD(SIDE B)


E
D
C
B
A
7
8
9
10
11
12
16
D1901
LND191
R1911
R1201
R1200
R1203
R1207
IC1159
CN1901
FB1153
C1169
R1912
C1907
C1902
C1915
R1914
C1914
D1902
LND192
C1903
C1188
FB1158
R1182
Q1155
C1911
R1169
R1185
D1152
Q1154
C1195
D1151
R1180
IC1901
C1912
C1909
R1210
C1974
C1910
C1972
C1973
#PC00180
IC1161
R1209
C1969
1-680-030-
11
R1161
RB1151
RB1152
R1175
R1176
R1177
C1967
C1186
C1187
RB1156
C1200
IC1157
C1189
C1193
C1192
FB1156
R1183
R1184
IC1158
C1191
C1165
FB1154
R1174
C1168
IC1156
C1164
C1167
C1181
C1180
RB1155
RB1154
R1168
R1167
R1186
R1189
R1170

For Schematic Diagram

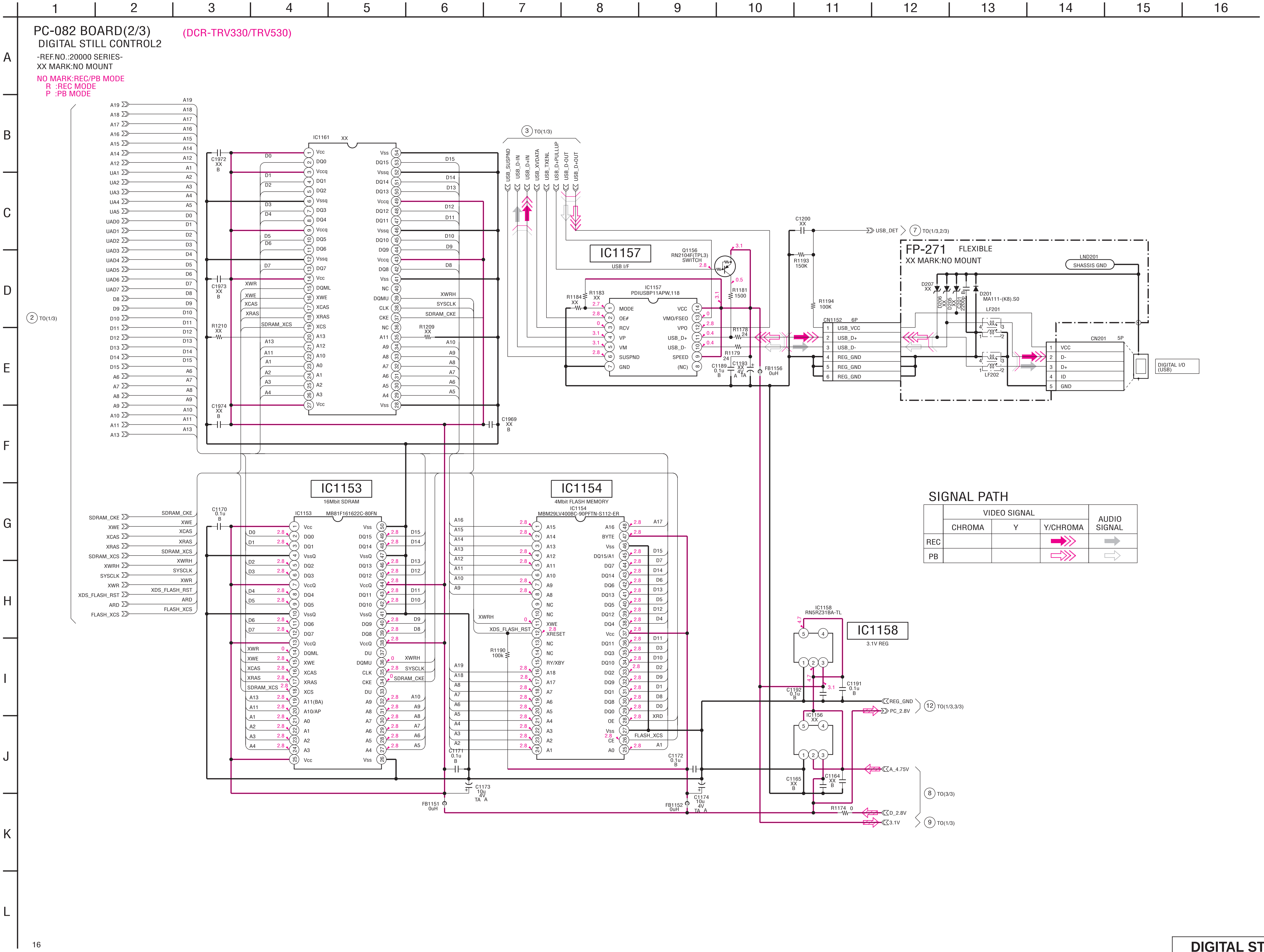
- Refer to page 4-55 for PC-082 printed wiring board.
- Refer to page 4-105 for waveform.


PC-082 BOARD(1/3)
DIGITAL STILL CONTROL1
(DCR-TRV330/TRV530)
-REF.NO.:20000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC1160 BUFFER TC7W08FU(TE12R)
IC1152 BUFFER
IC1151 XTAL OSC
IC1151 TC7SHU04FU-TE85R
X1151 48MHz
X1152 25.8048MHz
IC1155 DIGITAL STILL CONTROL IC1155 HD6417197FL77
IC1159 BUFFER TC7W08FU(TE12R)
IC1162
Q1153 RN1104F(TPL3) INV
Q1155 2SA1832F-Y/GR(TPL3) B+ SWITCH
Q1154 MS VCC SWITCH RN1107F(TPL3)
D1151 MA111-(K8).S0
D1152 UDZS-TE17-8.2B
FP-274 FLEXIBLE
CN1153 12P
CN001 10P
MEMORY STICK CONNECTOR
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
A B C D E F G H I J K L M N
① TO(3/3)
② TO(2/3)
③ TO(2/3)
④ TO(3/3)
⑤ TO(3/3)
⑥ TO(3/3)
⑦ TO(2/3,3/3)
⑩ TO(3/3)
⑪ TO(3/3)
⑫ TO(2/3,3/3)
⑲ TO(2/3)
16

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

For Schematic Diagram
- Refer to page 4-55 for PC-082 printed wiring board.
- Refer to page 4-65 for printed wiring board of FP-271 flexible.

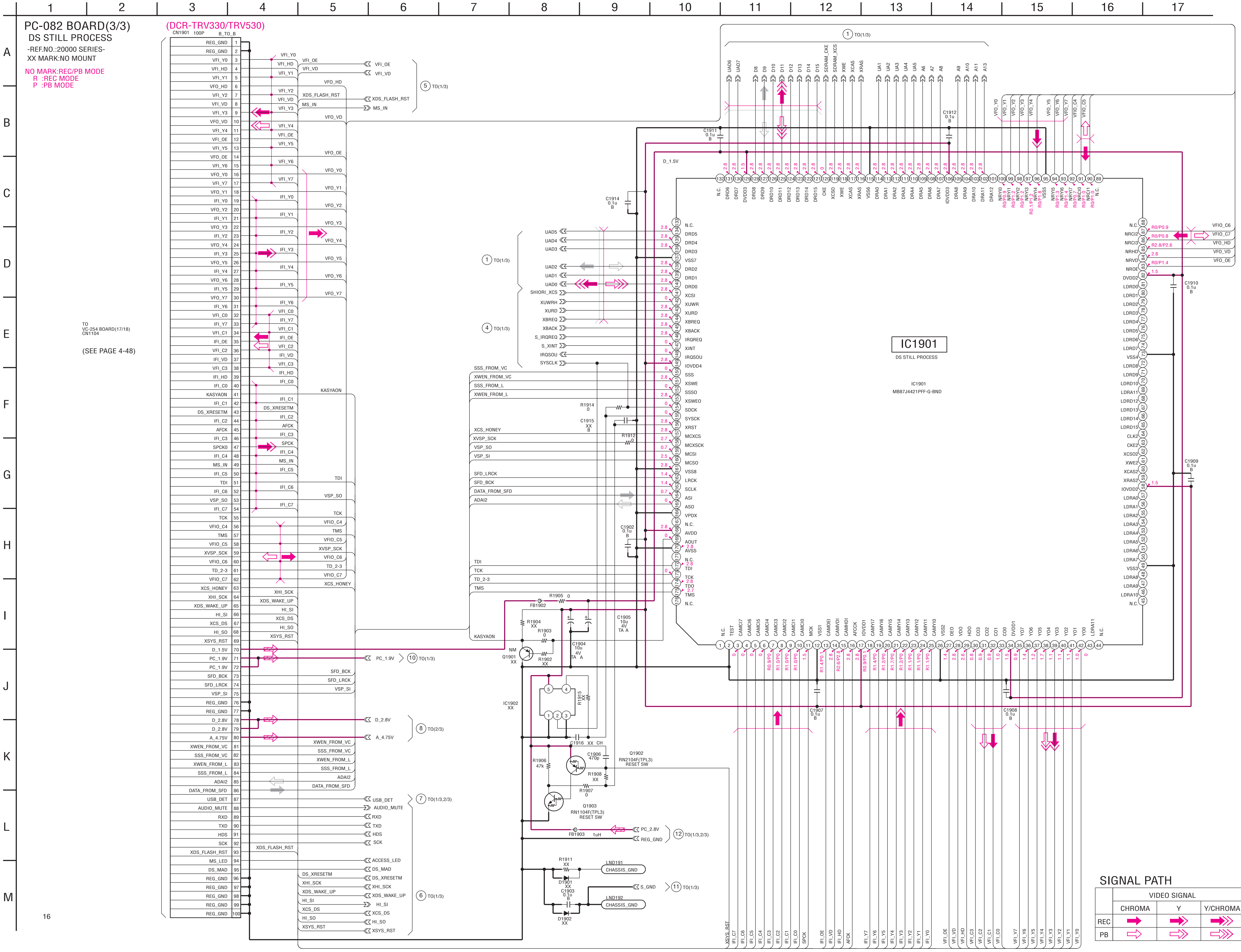

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J K L
PC-082 BOARD(2/3)
DIGITAL STILL CONTROL2
(DCR-TRV330/TRV530)
-REF.NO.:20000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
2 TO(1/3)
3 TO(1/3)
IC1161
IC1153
16Mbit SDRAM
IC1153 MB81F161622C-80FN
IC1154
4Mbit FLASH MEMORY
IC1154 MBM29LV400BC-90PFTN-S112-ER
IC1157
USB I/F
IC1157 PDIUSBP11APW,118
Q1156 RN2104F(TPL3) SWITCH
IC1158
3.1V REG
IC1158 RN5RZ31BA-TL
IC1156 XX
USB_DET
7 TO(1/3,2/3)
FP-271 FLEXIBLE
XX MARK:NO MOUNT
LND201 SHASSIS GND
D201 MA111-(K8).S0
LF201
LF202
CN1152 6P
CN201 5P
USB_VCC
USB_D+
USB_D-
REG_GND
VCC
D-
D+
ID
GND
DIGITAL I/O (USB)
REG_GND
PC_2.8V
12 TO(1/3,3/3)
A_4.75V
8 TO(3/3)
D_2.8V
3.1V
9 TO(1/3)
FB1151 0uH
FB1152 0uH
FB1156 0uH

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

DIGITAL STILL CONTROL 2
PC-082 (2/3)

For Schematic Diagram
• Refer to page 4-55 for printed wiring board.


PC-082 BOARD(3/3)
DS STILL PROCESS
-REF.NO.:20000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
(DCR-TRV330/TRV530)
CN1901 100P B_TO_B
TO VC-254 BOARD(17/18) CN1104
(SEE PAGE 4-48)
IC1901
DS STILL PROCESS
IC1901 MB87J4421PFF-G-BND
Q1901
Q1902 RN2104F(TPL3) RESET SW
Q1903 RN1104F(TPL3) RESET SW
IC1902
FB1902
FB1903 1uH
LND191 CHASSIS_GND
LND192 CHASSIS_GND
D1901
D1902
① TO(1/3)
④ TO(1/3)
⑤ TO(1/3)
⑥ TO(1/3)
⑦ TO(1/3,2/3)
⑧ TO(2/3)
⑩ TO(1/3)
⑪ TO(1/3)
⑫ TO(1/3,2/3)
PC_1.9V
D_2.8V
A_4.75V
PC_2.8V
REG_GND
S_GND
D_1.5V
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A B C D E F G H I J K L M

SIGNAL PATH

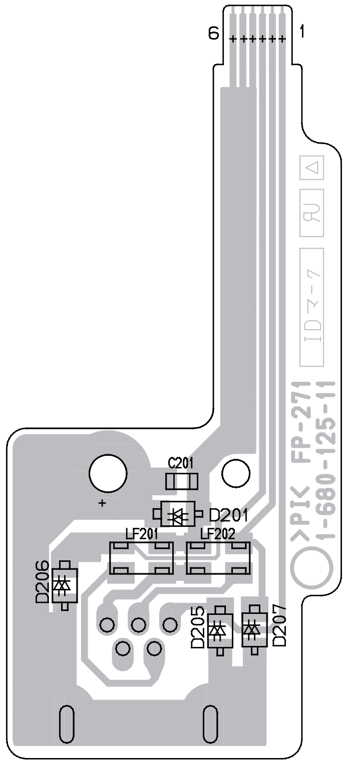
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

FP-271 (USB), FP-282 (FOCUS), FP-275 (SWITCH) FLEXIBLE BOARDS

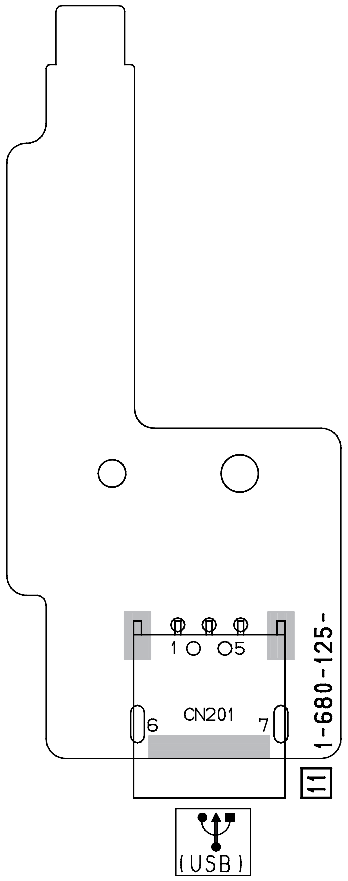
— Ref. No. FP-271, FP-282, FP-275 Flexible Boards; 30,000 Series —

- Refer to page 4-62 for schematic diagram.

FP-271 FLEXIBLE (SIDE A)

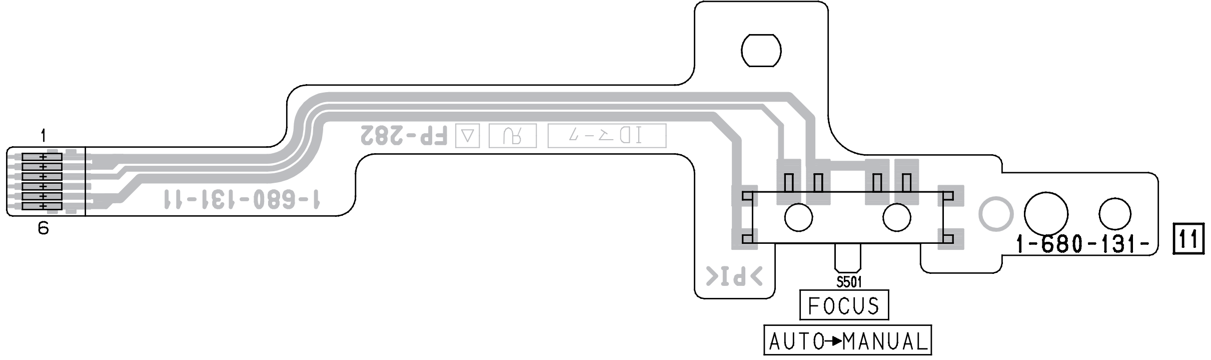

6
1
C201
D201
LF201
LF202
D206
D205
D207
FP-271
1-680-125-11
ID マーク
FU
>PI<

FP-271 FLEXIBLE (SIDE B)


1
5
6
7
CN201
1-680-125-
11
(USB)

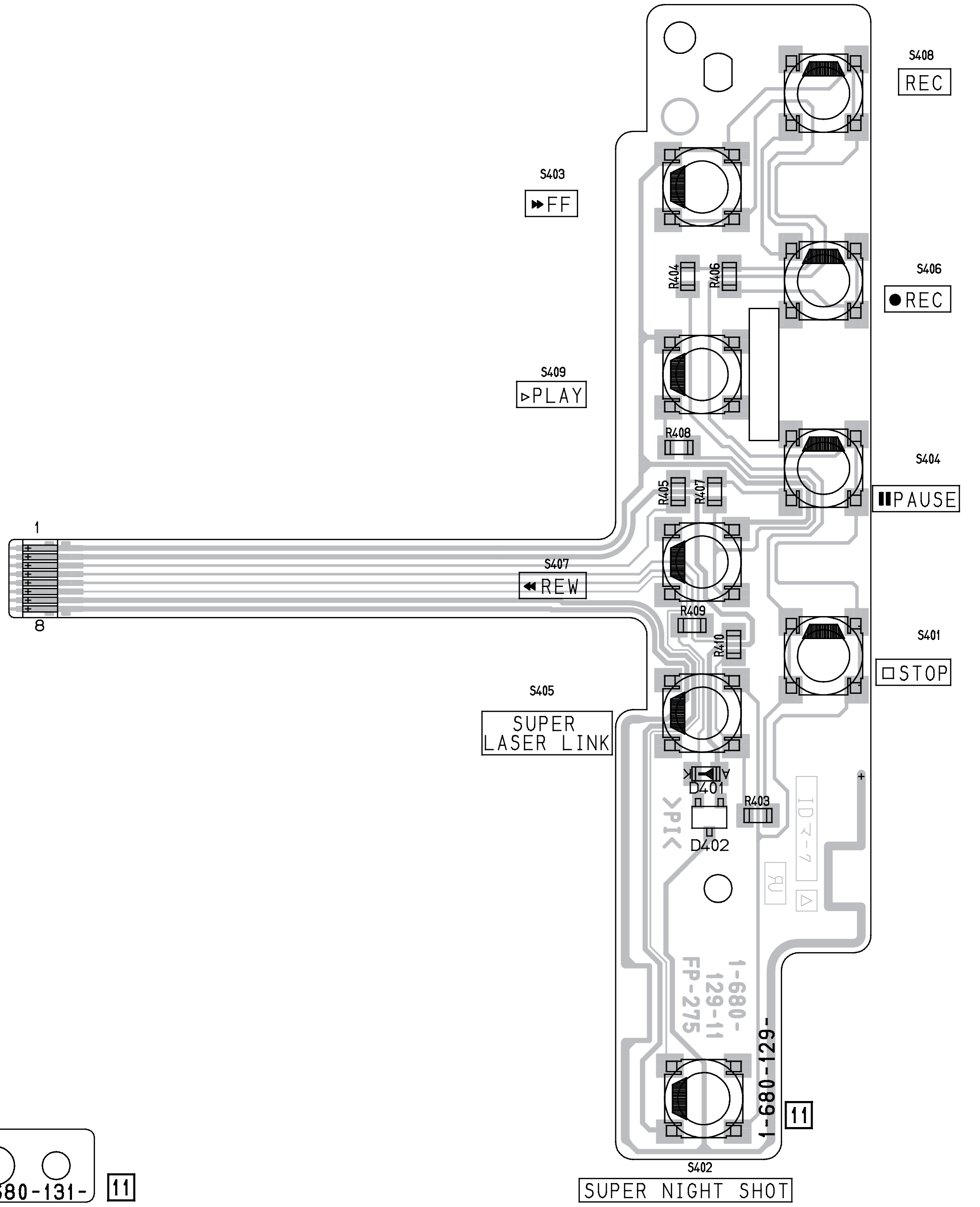
- Refer to page 4-76 for schematic diagram.

FP-282 FLEXIBLE (SIDE A)


1
6
FP-282
ID マーク
FU
1-680-131-11
>PI<
S501
FOCUS
AUTO→MANUAL
1-680-131-
11

- Refer to page 4-76 for schematic diagram.

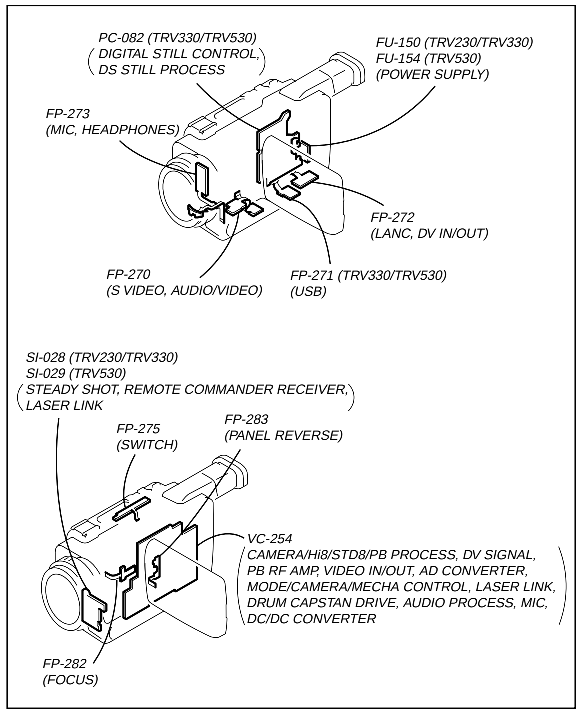
FP-275 FLEXIBLE (SIDE A)


S408
REC
S403
⏩FF
S406
●REC
R404
R406
S409
▷PLAY
R408
S404
⏸PAUSE
R405
R407
1
8
S407
⏪REW
R409
R410
S401
□STOP
S405
SUPER
LASER LINK
D401
R403
D402
>PI<
ID マーク
FU
1-680-129-11
FP-275
1-680-129-
11
S402
SUPER NIGHT SHOT

For printed wiring boards

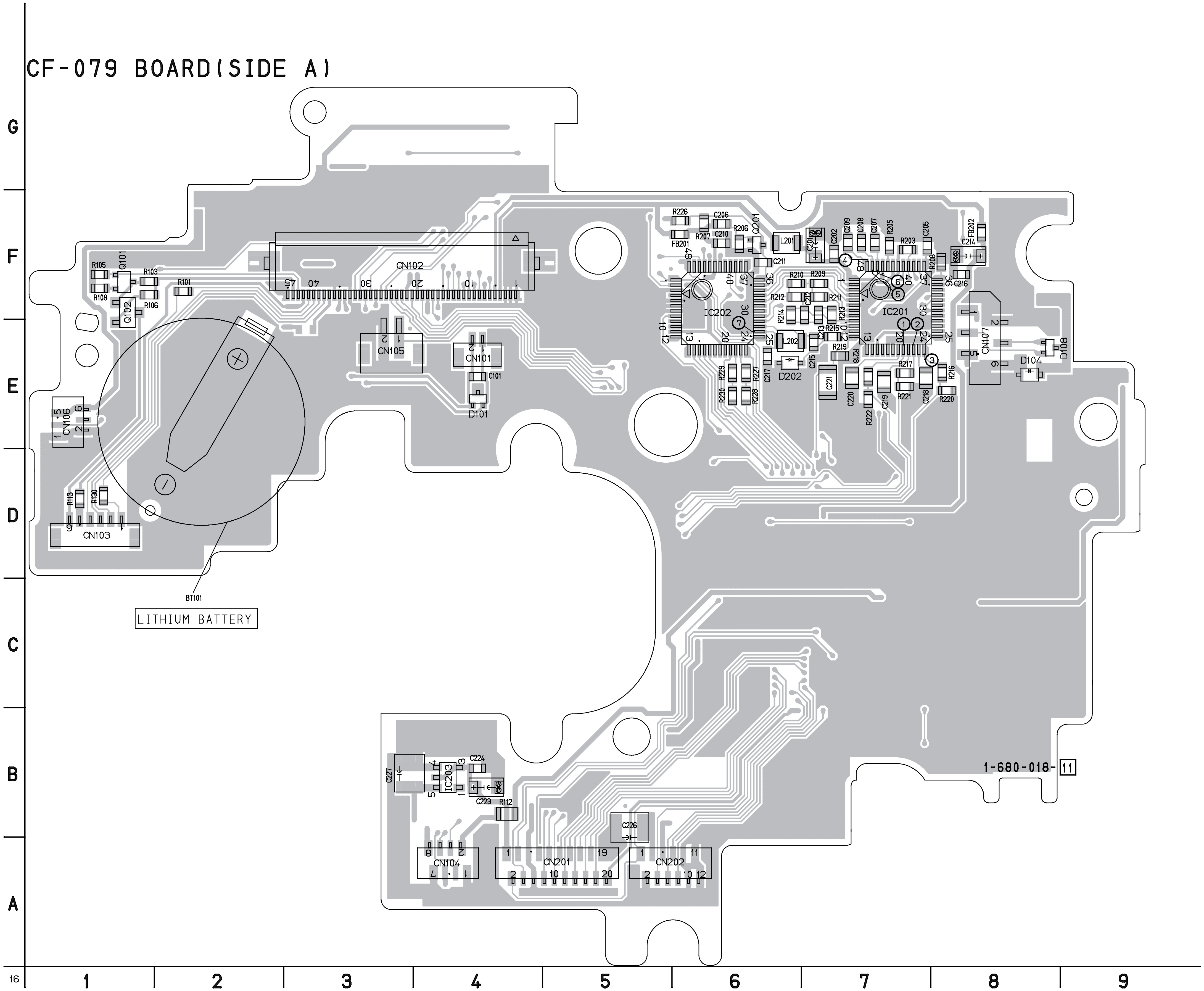
- FP-271 flexible board consists of multiple layers. However, only the sides (layers) A and B are shown.
- FP-282, FP-275 flexible boards consists of multiple layers. However, only the sides (layers) A is shown.

There are a few cases that the part printed on this diagram isn't mounted in this model.


PC-082 (TRV330/TRV530)
(DIGITAL STILL CONTROL, DS STILL PROCESS)
FU-150 (TRV230/TRV330)
FU-154 (TRV530)
(POWER SUPPLY)
FP-273
(MIC, HEADPHONES)
FP-272
(LANC, DV IN/OUT)
FP-270
(S VIDEO, AUDIO/VIDEO)
FP-271 (TRV330/TRV530)
(USB)
SI-028 (TRV230/TRV330)
SI-029 (TRV530)
(STEADY SHOT, REMOTE COMMANDER RECEIVER, LASER LINK)
FP-275
(SWITCH)
FP-283
(PANEL REVERSE)
VC-254
(CAMERA/Hi8/STD8/PB PROCESS, DV SIGNAL, PB RF AMP, VIDEO IN/OUT, AD CONVERTER, MODE/CAMERA/MECHA CONTROL, LASER LINK, DRUM CAPSTAN DRIVE, AUDIO PROCESS, MIC, DC/DC CONVERTER)
FP-282
(FOCUS)

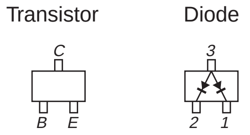
CF-079 (USER FUNCTION, EVF DRIVE) PRINTED WIRING BOARD (DCR-TRV230/TRV330)

— Ref. No. CF-079 Board; 1,000 Series —

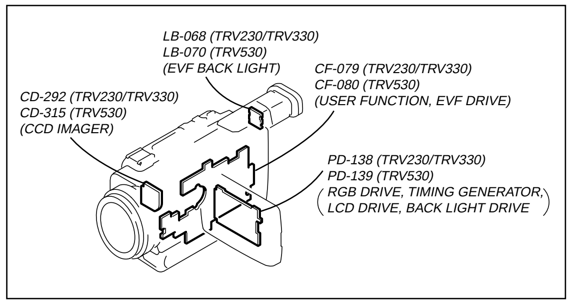

CF-079 BOARD(SIDE A)
G
F
E
D
C
B
A
16
1
2
3
4
5
6
7
8
9
CN102
CN105
CN101
C101
D101
CN106
CN103
R113
R130
R105
R108
Q101
Q102
R103
R106
R101
BT101
LITHIUM BATTERY
IC202
IC201
R226
C206
R207
C210
R206
Q201
FB201
L201
C211
C201
C202
C209
C208
C207
R205
R203
C205
R208
FB202
C214
C216
R210
R209
R212
R211
R214
R213
R215
L202
R219
R218
D202
C215
C217
R229
R230
R227
R228
C221
C220
R222
C219
R221
R217
C218
R216
R220
CN107
D104
D108
C227
IC203
C224
C223
R112
C226
CN104
CN201
CN202
1-680-018-11

For printed wiring board

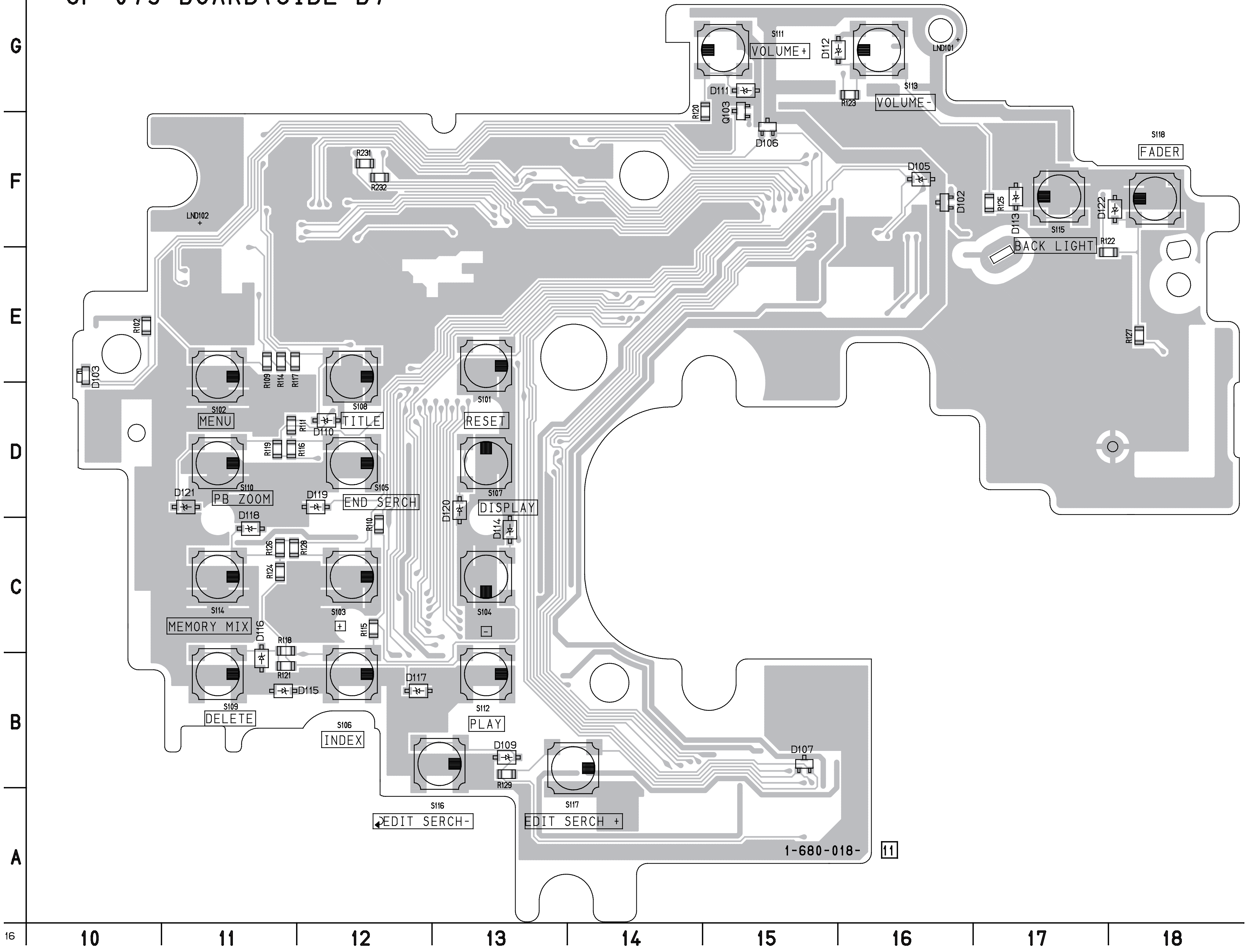
- Refer to page 4-109 for parts location.
- CF-079 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts


Transistor
Diode
C
B
E
3
2
1

There are a few cases that the part printed on this diagram isn’t mounted in this model.

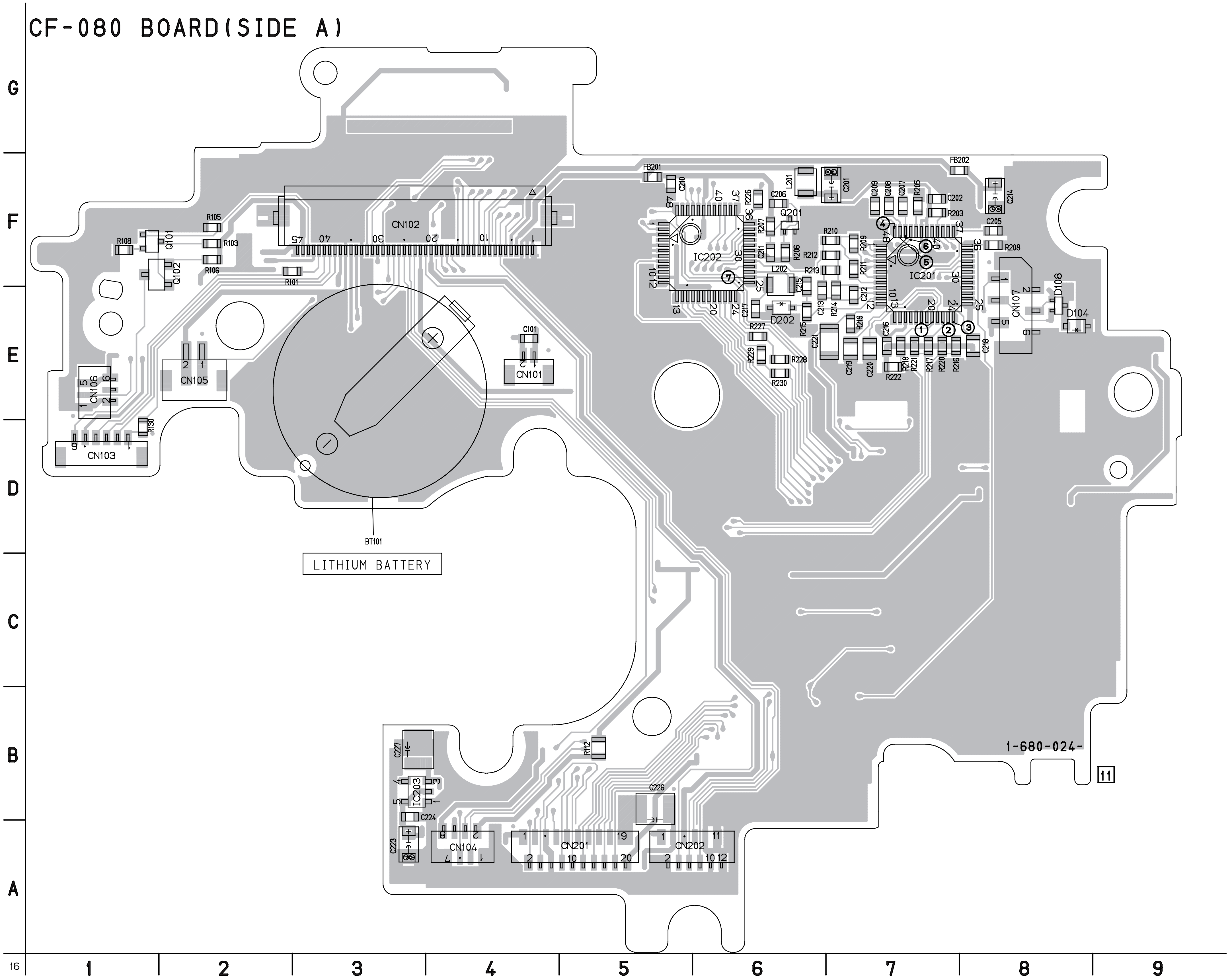

LB-068 (TRV230/TRV330)
LB-070 (TRV530)
(EVF BACK LIGHT)
CF-079 (TRV230/TRV330)
CF-080 (TRV530)
(USER FUNCTION, EVF DRIVE)
CD-292 (TRV230/TRV330)
CD-315 (TRV530)
(CCD IMAGER)
PD-138 (TRV230/TRV330)
PD-139 (TRV530)
(RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE)

CF-079 BOARD(SIDE B)


G
F
E
D
C
B
A
10
11
12
13
14
15
16
17
18
S111
VOLUME +
D112
LND101
D111
Q103
R120
D106
R123
S113
VOLUME -
S118
FADER
R231
R232
D105
D102
R125
D113
S115
D122
BACK LIGHT
R122
LND102
R127
R102
D103
R109
R114
R117
S101
RESET
S102
MENU
S108
TITLE
R111
D110
R119
R116
D121
S110
PB ZOOM
D119
S105
END SERCH
S107
DISPLAY
D120
D114
D118
R110
R126
R128
R124
S114
MEMORY MIX
S103
+
R115
S104
-
D116
R118
R121
D115
D117
S109
DELETE
S112
PLAY
S106
INDEX
D109
R129
D107
S116
EDIT SERCH-
S117
EDIT SERCH +
1-680-018-
11

CF-080 (USER FUNCTION, EVF DRIVE) PRINTED WIRING BOARD (DCR-TRV530)

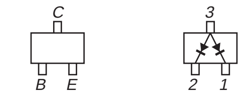
— Ref. No. CF-080 Board; 1,000 Series —


CF-080 BOARD(SIDE A)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
16
CN102
CN101
CN103
CN104
CN105
CN106
CN107
CN201
CN202
IC201
IC202
IC203
Q101
Q102
Q201
D104
D108
D202
L201
L202
FB201
FB202
BT101
LITHIUM BATTERY
1-680-024-
11

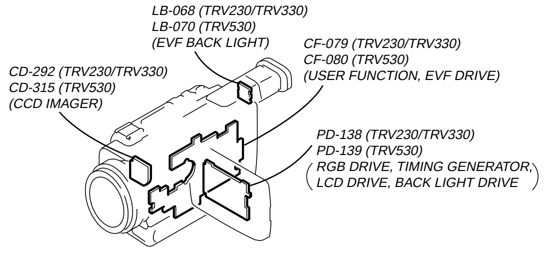
For printed wiring board

- Refer to page 4-110 for parts location.
- CF-080 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

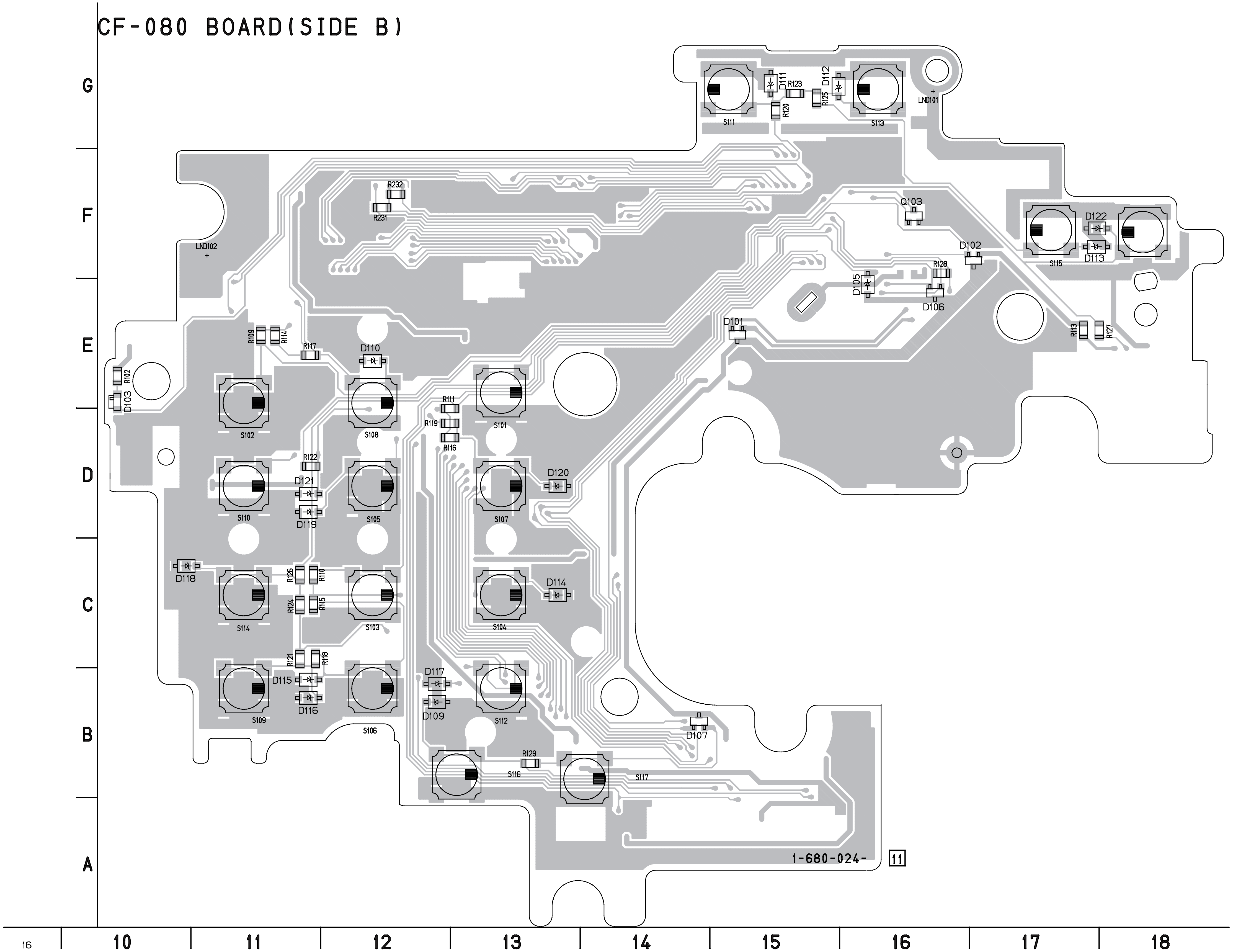
Transistor Diode



There are a few cases that the part printed on this diagram isn't mounted in this model.

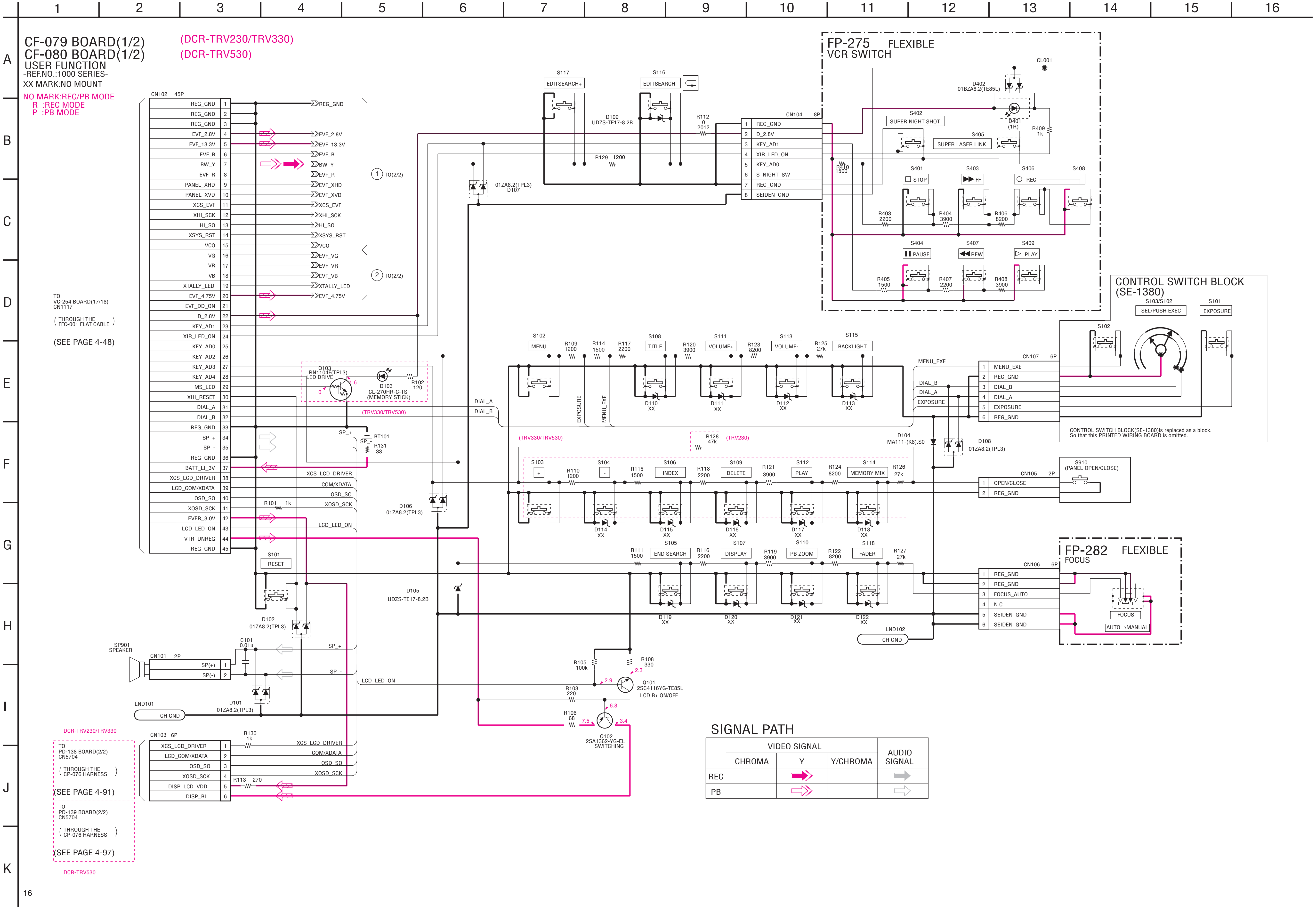

LB-068 (TRV230/TRV330)
LB-070 (TRV530)
(EVF BACK LIGHT)
CF-079 (TRV230/TRV330)
CF-080 (TRV530)
(USER FUNCTION, EVF DRIVE)
CD-292 (TRV230/TRV330)
CD-315 (TRV530)
(CCD IMAGER)
PD-138 (TRV230/TRV330)
PD-139 (TRV530)
RGB DRIVE, TIMING GENERATOR,
LCD DRIVE, BACK LIGHT DRIVE

CF-080 BOARD(SIDE B)


G
F
E
D
C
B
A
16
10
11
12
13
14
15
16
17
18
S111
D111
R123
R120
D112
R125
S113
LND101
R232
R231
Q103
D122
D113
S115
D102
R128
D105
D106
LND102
D101
R113
R127
R109
R114
R117
D110
R102
D103
S102
S108
R111
R119
R116
S101
R122
D121
D119
S110
S105
D120
S107
D118
R126
R110
R124
R115
S114
S103
D114
S104
R121
R118
D115
D116
S109
S106
D117
D109
S112
D107
R129
S116
S117
1-680-024-
11

For Schematic Diagram

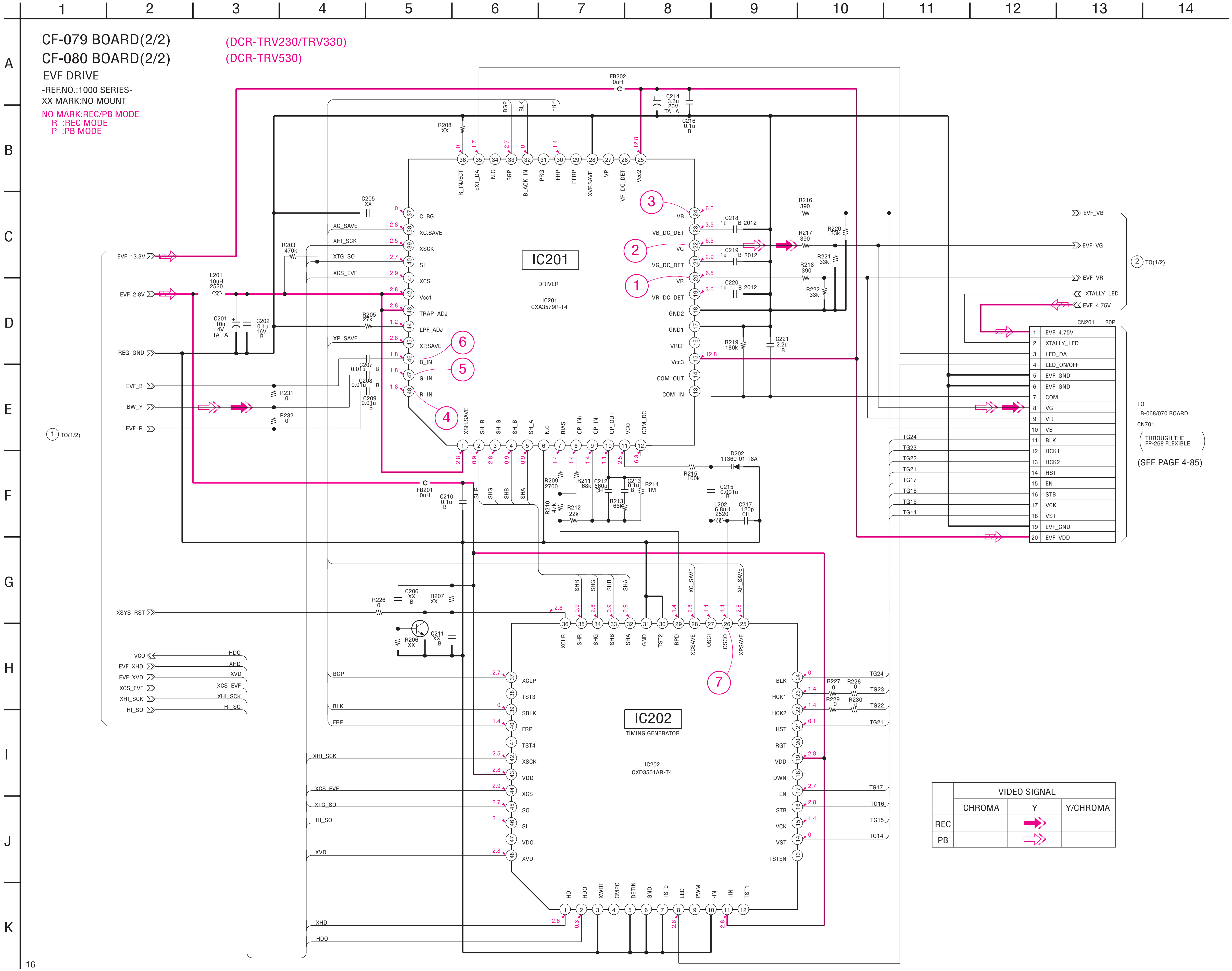
- Refer to page 4-67 (CF-079), 4-71 (CF-080) for printed wiring board.
- Refer to page 4-65 for printed wiring boards of FP-282, FP-275 flexible.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
CF-079 BOARD(1/2)
CF-080 BOARD(1/2)
USER FUNCTION
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
(DCR-TRV230/TRV330)
(DCR-TRV530)
CN102 45P
REG_GND
EVF_2.8V
EVF_13.3V
EVF_B
BW_Y
EVF_R
PANEL_XHD
PANEL_XVD
XCS_EVF
XHI_SCK
HI_SO
XSYS_RST
VCO
VG
VR
VB
XTALLY_LED
EVF_4.75V
EVF_DD_ON
D_2.8V
KEY_AD1
XIR_LED_ON
KEY_AD0
KEY_AD2
KEY_AD3
KEY_AD4
MS_LED
XHI_RESET
DIAL_A
DIAL_B
SP_+
SP_-
BATT_LI_3V
XCS_LCD_DRIVER
LCD_COM/XDATA
OSD_SO
XOSD_SCK
EVER_3.0V
LCD_LED_ON
VTR_UNREG
EVF_XHD
EVF_XVD
EVF_VG
EVF_VR
EVF_VB
1 TO(2/2)
2 TO(2/2)
TO VC-254 BOARD(17/18) CN1117
(THROUGH THE FFC-001 FLAT CABLE)
(SEE PAGE 4-48)
Q103 RN1104F(TPL3) LED DRIVE
D103 CL-270HR-C-TS (MEMORY STICK)
R102 120
(TRV330/TRV530)
BT101
R131 33
R101 1k
D106 01ZA8.2(TPL3)
D107 01ZA8.2(TPL3)
D109 UDZS-TE17-8.2B
S117 EDITSEARCH+
S116 EDITSEARCH-
R112 0 2012
R129 1200
CN104 8P
REG_GND
D_2.8V
KEY_AD1
XIR_LED_ON
KEY_AD0
S_NIGHT_SW
SEIDEN_GND
FP-275 FLEXIBLE
VCR SWITCH
CL001
D402 01BZA8.2(TE85L)
D401 (1R)
R409 1k
S402 SUPER NIGHT SHOT
S405 SUPER LASER LINK
R410 1500
S401 STOP
S403 FF
S406 REC
S408
R403 2200
R404 3900
R406 8200
S404 PAUSE
S407 REW
S409 PLAY
R405 1500
R407 2200
R408 3900
CONTROL SWITCH BLOCK (SE-1380)
S103/S102 SEL/PUSH EXEC
S101 EXPOSURE
S102
CN107 6P
MENU_EXE
DIAL_B
DIAL_A
EXPOSURE
CONTROL SWITCH BLOCK(SE-1380)is replaced as a block. So that this PRINTED WIRING BOARD is omitted.
S102 MENU
R109 1200
R114 1500
R117 2200
S108 TITLE
R120 3900
S111 VOLUME+
R123 8200
S113 VOLUME-
R125 27k
S115 BACKLIGHT
D110 XX
D111 XX
D112 XX
D113 XX
MENU_EXE
(TRV330/TRV530)
R128 47k
(TRV230)
D104 MA111-(K8).S0
D108 01ZA8.2(TPL3)
S103 +
S104 -
R110 1200
R115 1500
S106 INDEX
R118 2200
S109 DELETE
R121 3900
S112 PLAY
R124 8200
S114 MEMORY MIX
R126 27k
D114 XX
D115 XX
D116 XX
D117 XX
D118 XX
CN105 2P
OPEN/CLOSE
S910 (PANEL OPEN/CLOSE)
S101 RESET
R111 1500
S105 END SEARCH
R116 2200
S107 DISPLAY
R119 3900
S110 PB ZOOM
R122 8200
S118 FADER
R127 27k
D119 XX
D120 XX
D121 XX
D122 XX
FP-282 FLEXIBLE
FOCUS
CN106 6P
FOCUS_AUTO
N.C
FOCUS
AUTO→MANUAL
LND102
CH GND
D105 UDZS-TE17-8.2B
D102 01ZA8.2(TPL3)
SP901 SPEAKER
CN101 2P
SP(+)
SP(-)
C101 0.01u
LND101
D101 01ZA8.2(TPL3)
R105 100k
R108 330
Q101 2SC4116YG-TE85L LCD B+ ON/OFF
R103 220
R106 68
Q102 2SA1362-YG-EL SWITCHING
DCR-TRV230/TRV330
TO PD-138 BOARD(2/2) CN5704
(THROUGH THE CP-076 HARNESS)
(SEE PAGE 4-91)
TO PD-139 BOARD(2/2) CN5704
(THROUGH THE CP-076 HARNESS)
(SEE PAGE 4-97)
DCR-TRV530
CN103 6P
R130 1k
R113 270
DISP_LCD_VDD
DISP_BL
16

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC		➡		➡
PB		⇨		⇨

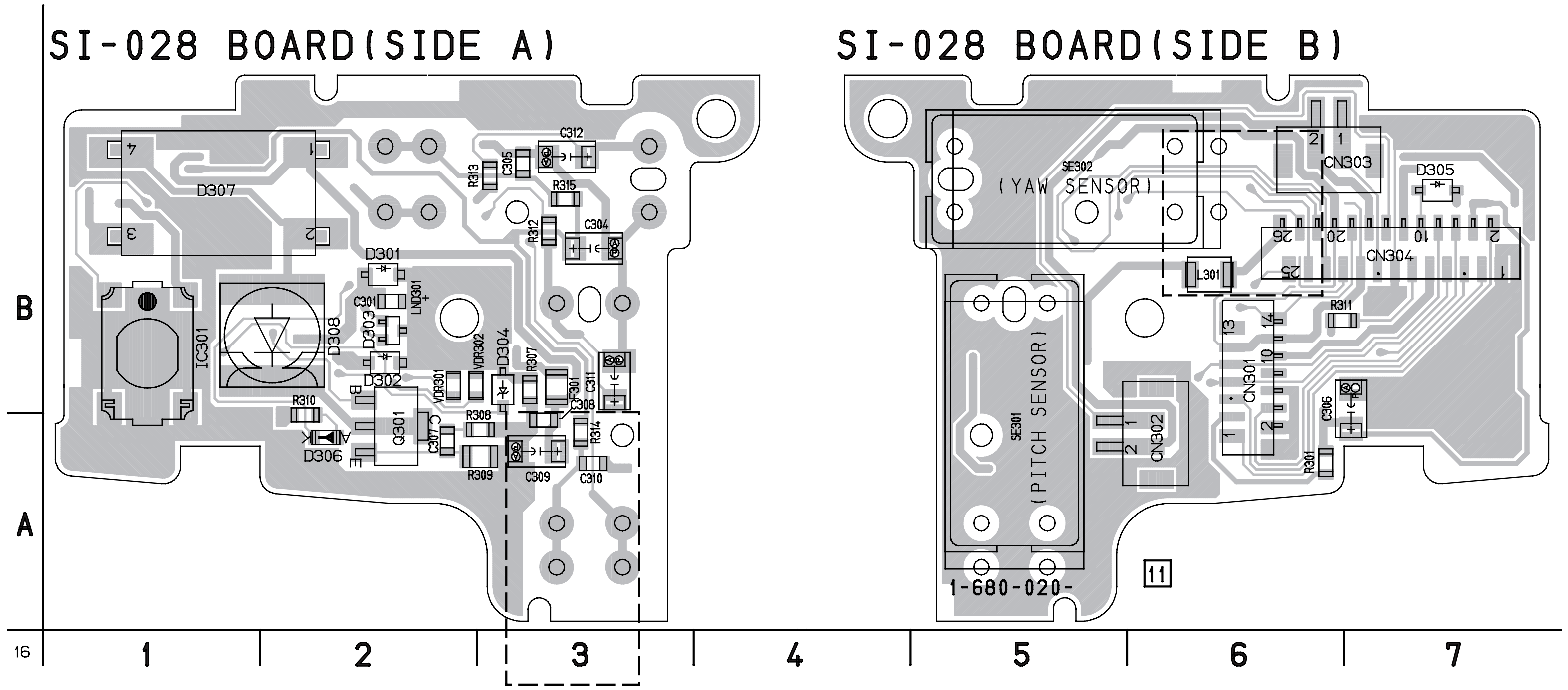
For Schematic Diagram
- Refer to page 4-67 (CF-079), 4-71 (CF-080) for printed wiring board.
- Refer to page 4-105 for waveforms.

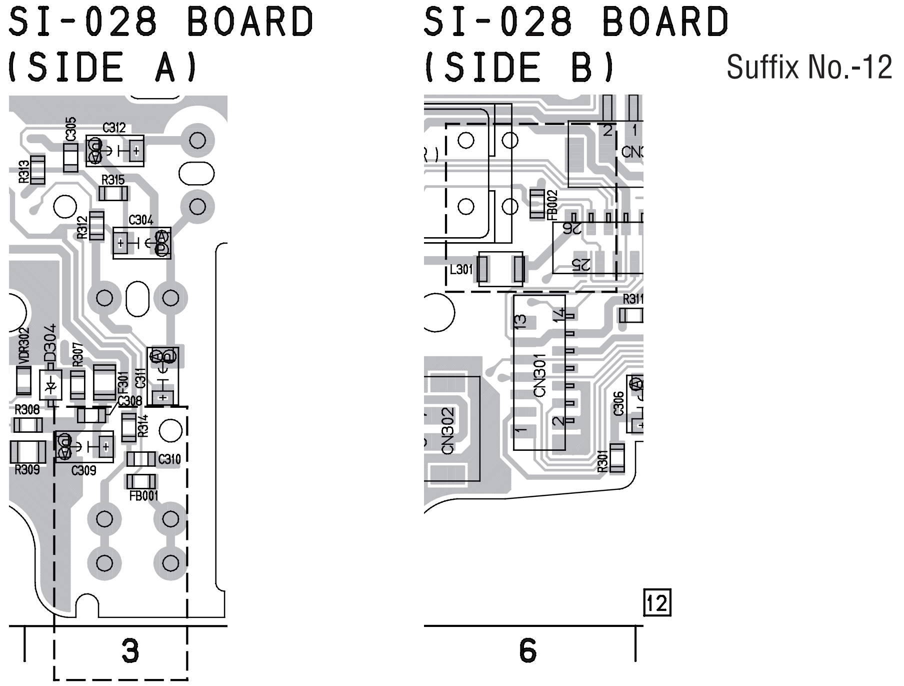

CF-079 BOARD(2/2) (DCR-TRV230/TRV330)
CF-080 BOARD(2/2) (DCR-TRV530)
EVF DRIVE
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC201
DRIVER
IC201 CXA3579R-T4
IC202
TIMING GENERATOR
IC202 CXD3501AR-T4
CN701 20P
EVF_4.75V
XTALLY_LED
LED_DA
LED_ON/OFF
EVF_GND
COM
VG
VR
VB
BLK
HCK1
HCK2
HST
EN
STB
VCK
VST
EVF_VDD
TO LB-068/070 BOARD CN701
THROUGH THE FP-268 FLEXIBLE
(SEE PAGE 4-85)
TO(1/2)
EVF_13.3V
EVF_2.8V
REG_GND
EVF_B
BW_Y
EVF_R
XSYS_RST
VCO
EVF_XHD
EVF_XVD
XCS_EVF
XHI_SCK
HI_SO
EVF_VB
EVF_VG
EVF_VR
EVF_4.75V
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K

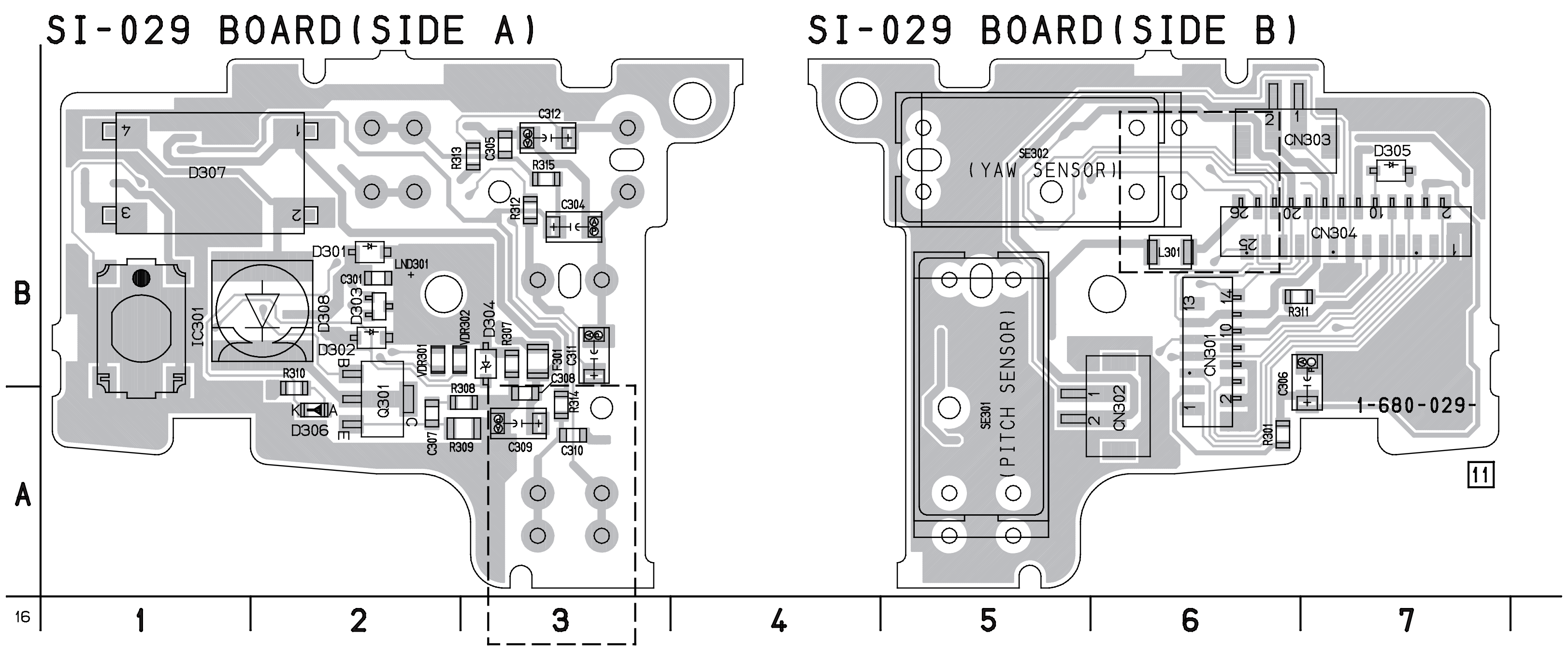
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡	
PB		⇨	

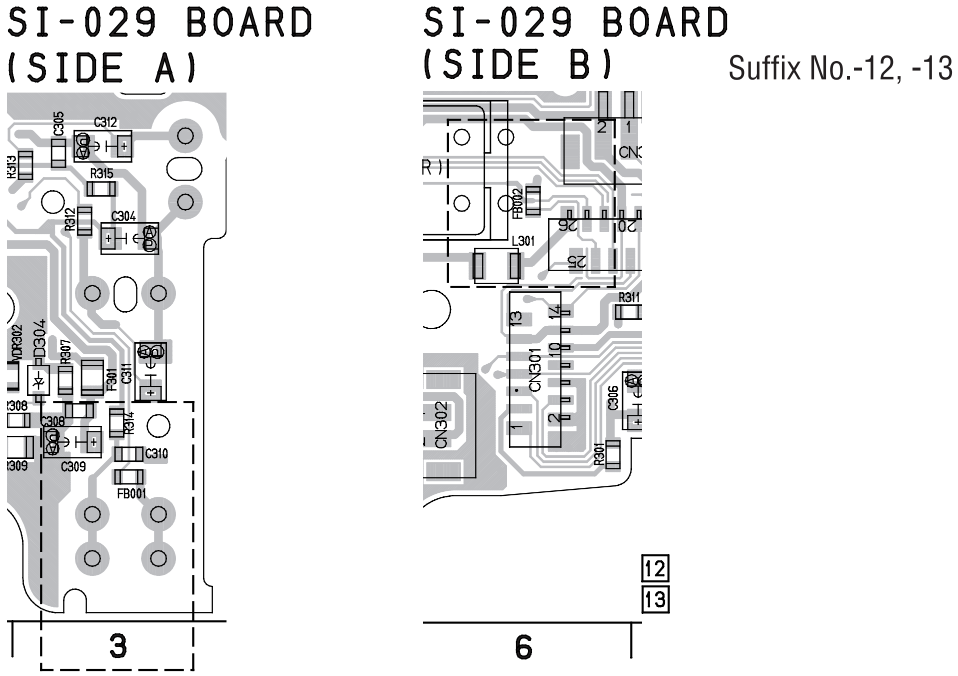
SI-028 (DCR-TRV230/TRV330), SI-029 (DCR-TRV530) (STEADY SHOT, REMOTE COMMANDER RECEIVER, LASER LINK) PRINTED WIRING BOARDS

— Ref. No. SI-028, SI-029 Boards; 1,000 Series —


SI-028 BOARD(SIDE A)
SI-028 BOARD(SIDE B)
D307
IC301
D301
D302
D303
D304
D306
D308
LND301
VDR301
VDR302
Q301
C301
C304
C305
C307
C308
C309
C310
C311
C312
F301
R306
R307
R308
R309
R310
R312
R313
R314
R315
SE302
(YAW SENSOR)
SE301
(PITCH SENSOR)
CN301
CN302
CN303
CN304
D305
L301
R301
R311
C306
1-680-020-
11
B
A
16
1
2
3
4
5
6
7


SI-028 BOARD
(SIDE A)
SI-028 BOARD
(SIDE B)
Suffix No.-12
C305
C312
R313
R315
R312
C304
VDR302
D304
R307
F301
C311
R308
C308
R314
R309
C309
C310
FB001
FB002
L301
R311
CN301
CN302
C306
R301
12
3
6

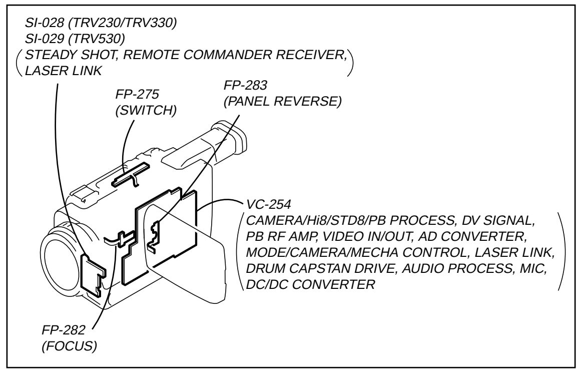

SI-029 BOARD(SIDE A)
SI-029 BOARD(SIDE B)
D307
IC301
D301
D302
D303
D304
D306
D308
LND301
VDR301
VDR302
Q301
C301
C304
C305
C307
C308
C309
C310
C311
C312
F301
R306
R307
R308
R309
R310
R312
R313
R314
R315
SE302
(YAW SENSOR)
SE301
(PITCH SENSOR)
CN301
CN302
CN303
CN304
D305
L301
R301
R311
C306
1-680-029-
11
B
A
16
1
2
3
4
5
6
7


SI-029 BOARD
(SIDE A)
SI-029 BOARD
(SIDE B)
Suffix No.-12, -13
C305
C312
R313
R315
R312
C304
VDR302
D304
R307
F301
C311
R308
C308
R314
R309
C309
C310
FB001
FB002
L301
R311
CN301
CN302
C306
R301
12
13
3
6

For printed wiring boards

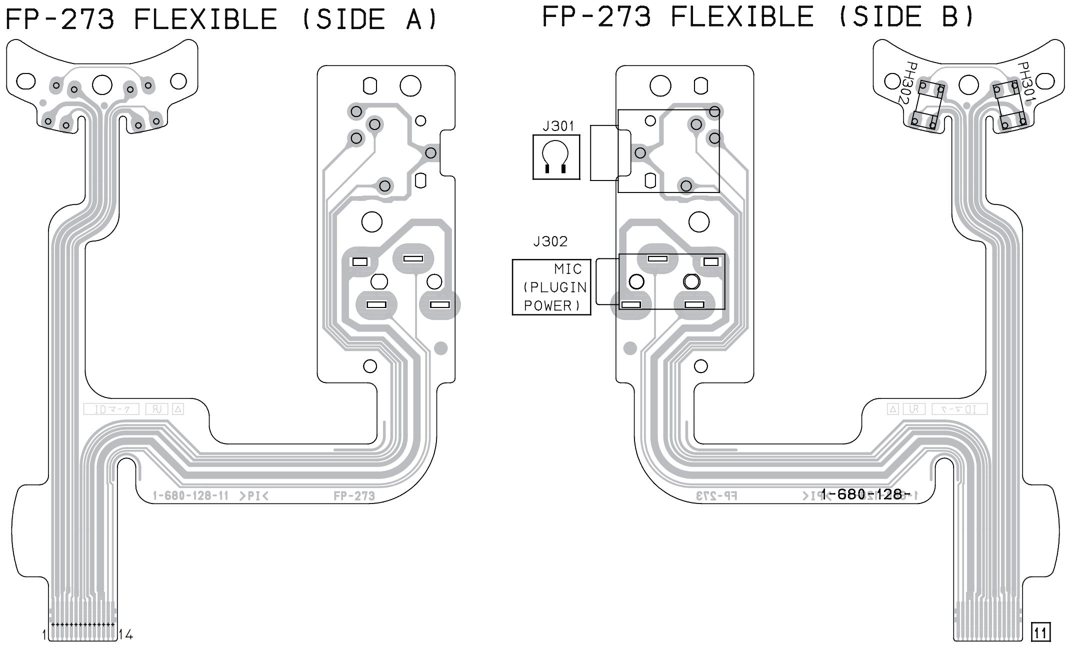
- Refer to page 4-110 for parts location.
- SI-028, SI-029 boards consists of multiple layers. However, only the sides (layers) A and B are shown.

There are a few cases that the part printed on this diagram isn’t mounted in this model.


SI-028 (TRV230/TRV330)
SI-029 (TRV530)
STEADY SHOT, REMOTE COMMANDER RECEIVER, LASER LINK
FP-275
(SWITCH)
FP-283
(PANEL REVERSE)
VC-254
CAMERA/Hi8/STD8/PB PROCESS, DV SIGNAL, PB RF AMP, VIDEO IN/OUT, AD CONVERTER, MODE/CAMERA/MECHA CONTROL, LASER LINK, DRUM CAPSTAN DRIVE, AUDIO PROCESS, MIC, DC/DC CONVERTER
FP-282
(FOCUS)

FP-273 (MIC, HEADPHONES) FLEXIBLE BOARD (DCR-TRV530)

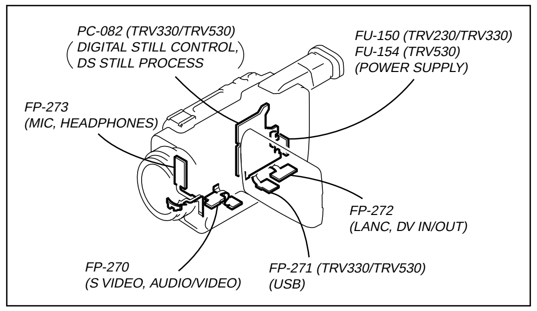
— Ref. No. FP-273 Flexible Board; 30,000 Series —


FP-273 FLEXIBLE (SIDE A)
FP-273 FLEXIBLE (SIDE B)
J301
J302
MIC (PLUGIN POWER)
PH302
PH301
1-680-128-11
FP-273
1
14
11

For printed wiring board

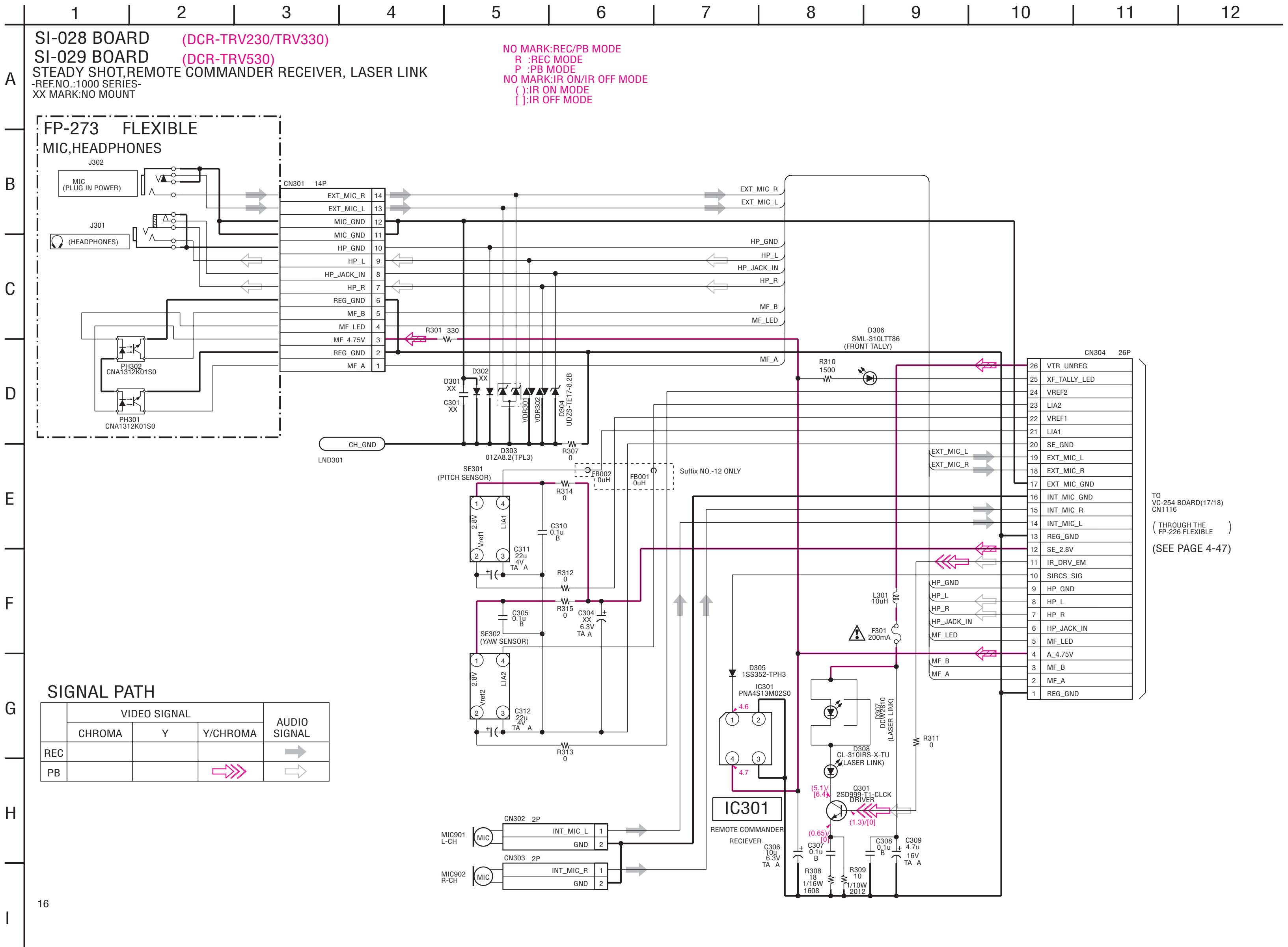
- FP-273 flexible board consists of multiple layers. However, only the sides (layers) A and B are shown.

There are a few cases that the part printed on this diagram isn't mounted in this model.


PC-082 (TRV330/TRV530)
(DIGITAL STILL CONTROL, DS STILL PROCESS)
FU-150 (TRV230/TRV330)
FU-154 (TRV530)
(POWER SUPPLY)
FP-273
(MIC, HEADPHONES)
FP-272
(LANC, DV IN/OUT)
FP-270
(S VIDEO, AUDIO/VIDEO)
FP-271 (TRV330/TRV530)
(USB)

For Schematic Diagram

- Refer to page 4-79 for printed wiring board.

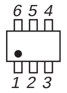

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
SI-028 BOARD (DCR-TRV230/TRV330)
SI-029 BOARD (DCR-TRV530)
STEADY SHOT,REMOTE COMMANDER RECEIVER, LASER LINK
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
NO MARK:IR ON/IR OFF MODE
( ):IR ON MODE
[ ]:IR OFF MODE
FP-273 FLEXIBLE
MIC,HEADPHONES
J302
MIC (PLUG IN POWER)
J301
(HEADPHONES)
PH302
CNA1312K01S0
PH301
CNA1312K01S0
CN301 14P
EXT_MIC_R
EXT_MIC_L
MIC_GND
MIC_GND
HP_GND
HP_L
HP_JACK_IN
HP_R
REG_GND
MF_B
MF_LED
MF_4.75V
REG_GND
MF_A
R301 330
D301 XX
C301 XX
D302 XX
VDR301
VDR302
D304 UDZS-TE17-8.2B
D303 01ZA8.2(TPL3)
R307 0
CH_GND
LND301
SE301 (PITCH SENSOR)
R314 0
FB002 0uH
FB001 0uH
Suffix NO.-12 ONLY
C310 0.1u B
C311 22u 4V TA A
R312 0
R315 0
C305 0.1u B
C304 XX 6.3V TA A
SE302 (YAW SENSOR)
C312 22u 4V TA A
R313 0
2.8V
Vref1
Vref2
LIA1
LIA2
D305 1SS352-TPH3
IC301 PNA4S13M02S0
IC301
REMOTE COMMANDER RECIEVER
4.6
4.7
D306 SML-310LTT86 (FRONT TALLY)
R310 1500
L301 10uH
F301 200mA
D307 DCW2810 (LASER LINK)
D308 CL-310IRS-X-TU (LASER LINK)
Q301 2SD999-T1-CLCK DRIVER
R311 0
(5.1) [6.4]
(1.3) [0]
(0.65) [0]
C306 10u 6.3V TA A
C307 0.1u B
R308 18 1/16W 1608
R309 10 1/10W 2012
C308 0.1u B
C309 4.7u 16V TA A
CN302 2P
INT_MIC_L
GND
MIC901 L-CH
CN303 2P
INT_MIC_R
GND
MIC902 R-CH
CN304 26P
VTR_UNREG
XF_TALLY_LED
VREF2
LIA2
VREF1
LIA1
SE_GND
EXT_MIC_L
EXT_MIC_R
EXT_MIC_GND
INT_MIC_GND
INT_MIC_R
INT_MIC_L
REG_GND
SE_2.8V
IR_DRV_EM
SIRCS_SIG
HP_GND
HP_L
HP_R
HP_JACK_IN
MF_LED
A_4.75V
MF_B
MF_A
REG_GND
TO VC-254 BOARD(17/18) CN1116
(THROUGH THE FP-226 FLEXIBLE)
(SEE PAGE 4-47)
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB
16

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

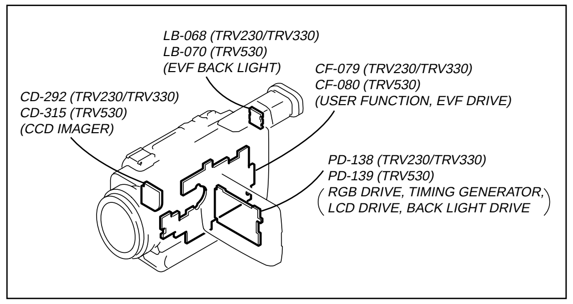
For printed wiring boards

- Refer to page 4-110 for parts location.
- LB-068, LB-070 boards consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor

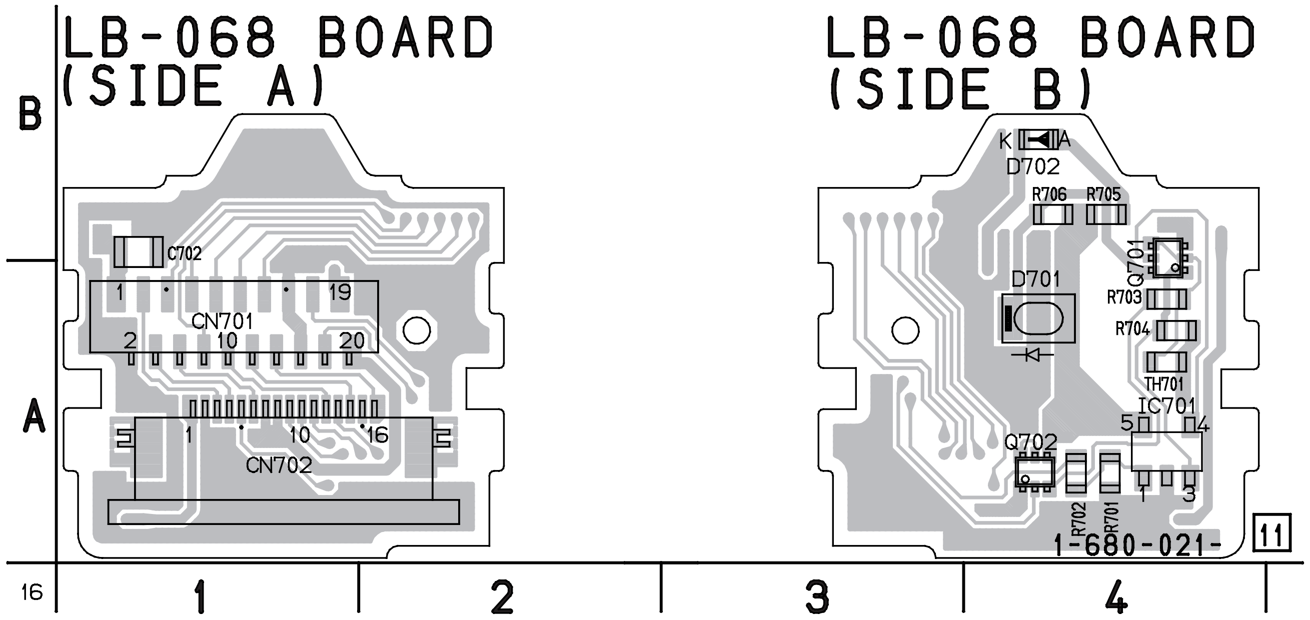


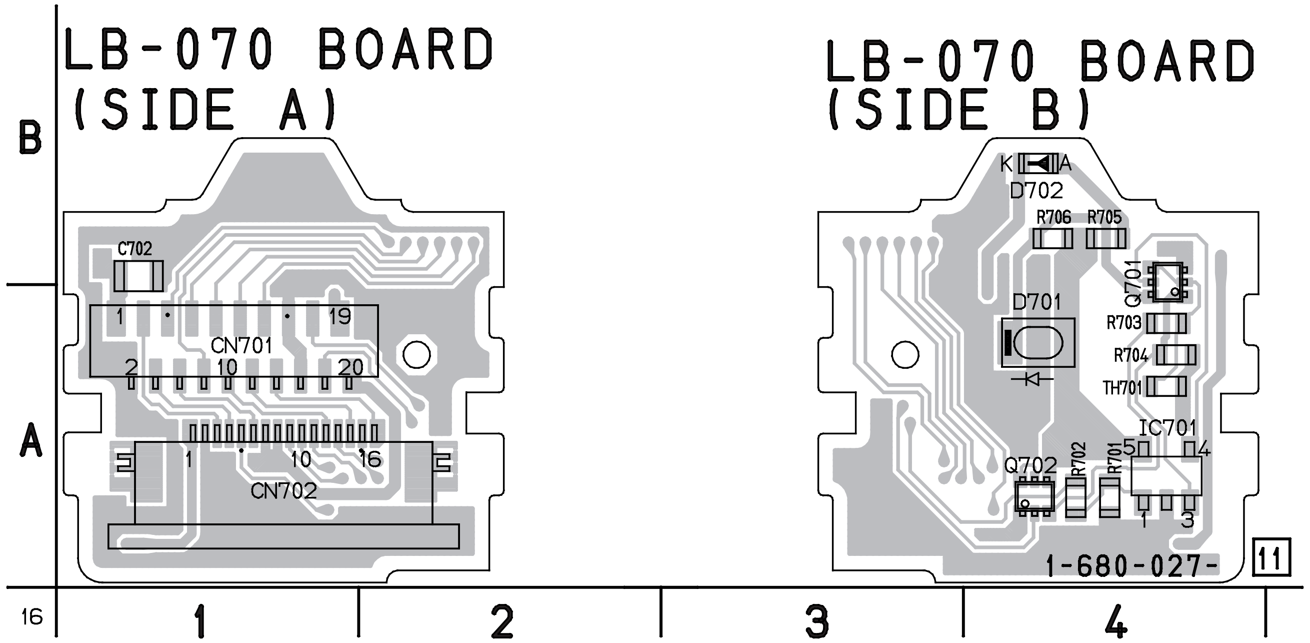
There are a few cases that the part printed on this diagram isn’t mounted in this model.


LB-068 (TRV230/TRV330)
LB-070 (TRV530)
(EVF BACK LIGHT)
CF-079 (TRV230/TRV330)
CF-080 (TRV530)
(USER FUNCTION, EVF DRIVE)
CD-292 (TRV230/TRV330)
CD-315 (TRV530)
(CCD IMAGER)
PD-138 (TRV230/TRV330)
PD-139 (TRV530)
(RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE)

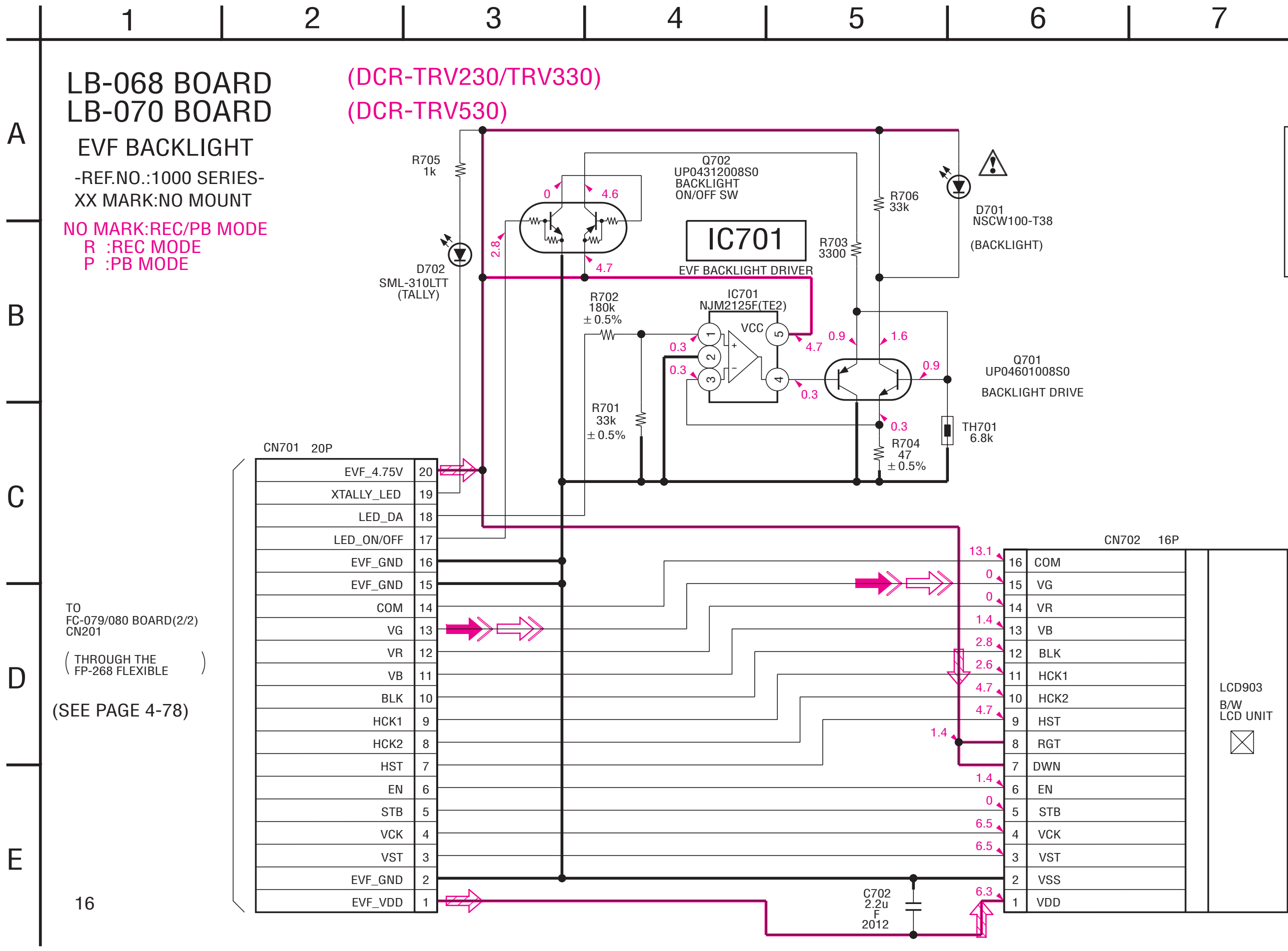
LB-068 (EVF, BACK LIGHT) PRINTED WIRING BOARD (DCR-TRV230/TRV330)
LB-070 (EVF, BACK LIGHT) PRINTED WIRING BOARD (DCR-TRV530)

— Ref. No. LB-068, LB-070 Boards; 1,000 Series —


LB-068 BOARD
(SIDE A)
LB-068 BOARD
(SIDE B)
B
A
C702
CN701
1
19
2
10
20
CN702
1
10
16
K
A
D702
R706
R705
Q701
D701
R703
R704
TH701
IC701
5
4
1
3
Q702
R702
R701
1-680-021-
11
16
1
2
3
4


LB-070 BOARD
(SIDE A)
LB-070 BOARD
(SIDE B)
B
A
C702
CN701
1
19
2
10
20
CN702
1
10
16
K
A
D702
R706
R705
Q701
D701
R703
R704
TH701
IC701
5
4
1
3
Q702
R702
R701
1-680-027-
11
16
1
2
3
4

For Schematic Diagram
- Refer to page 4-83 for printed wiring board.


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
LB-068 BOARD (DCR-TRV230/TRV330)
LB-070 BOARD (DCR-TRV530)
EVF BACKLIGHT
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
R705 1k
Q702 UP04312008S0 BACKLIGHT ON/OFF SW
R706 33k
D701 NSCW100-T38 (BACKLIGHT)
IC701
EVF BACKLIGHT DRIVER
R703 3300
D702 SML-310LTT (TALLY)
R702 180k ± 0.5%
IC701 NJM2125F(TE2)
VCC
Q701 UP04601008S0 BACKLIGHT DRIVE
R701 33k ± 0.5%
TH701 6.8k
R704 47 ± 0.5%
CN701 20P
20 EVF_4.75V
19 XTALLY_LED
18 LED_DA
17 LED_ON/OFF
16 EVF_GND
15 EVF_GND
14 COM
13 VG
12 VR
11 VB
10 BLK
9 HCK1
8 HCK2
7 HST
6 EN
5 STB
4 VCK
3 VST
2 EVF_GND
1 EVF_VDD
CN702 16P
16 COM
15 VG
14 VR
13 VB
12 BLK
11 HCK1
10 HCK2
9 HST
8 RGT
7 DWN
6 EN
5 STB
4 VCK
3 VST
2 VSS
1 VDD
LCD903 B/W LCD UNIT
TO FC-079/080 BOARD(2/2) CN201
(THROUGH THE FP-268 FLEXIBLE)
(SEE PAGE 4-78)
16
C702 2.2u F 2012
13.1
0
0
1.4
2.8
2.6
4.7
4.7
1.4
1.4
0
6.5
6.5
6.3
0
4.6
4.7
2.8
0.3
0.3
4.7
0.9
1.6
0.9
0.3
0.3

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

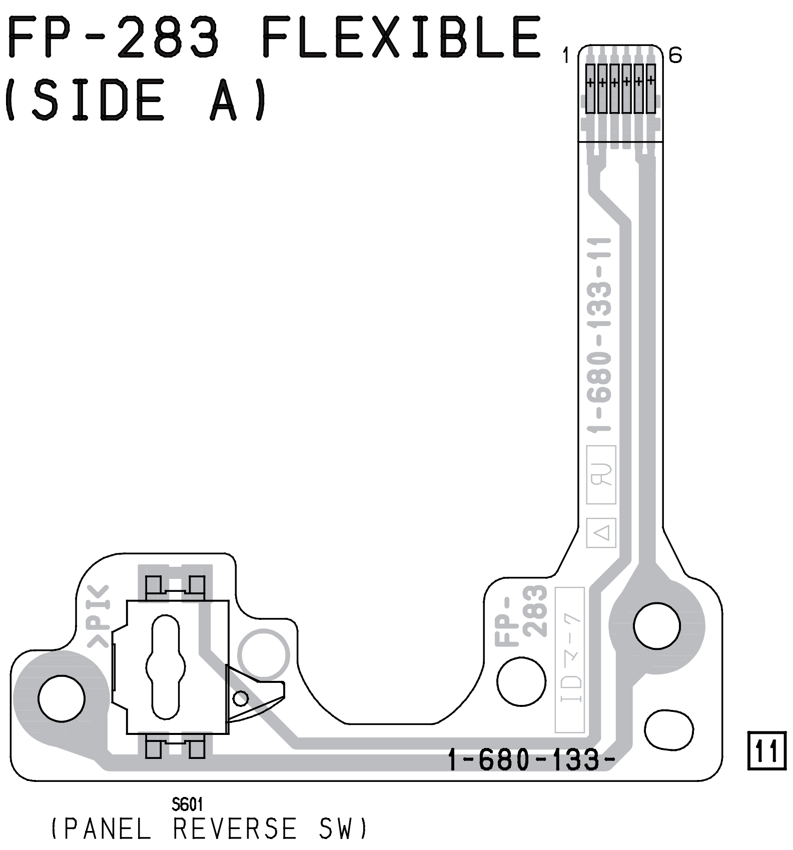
Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡	
PB		⇨	

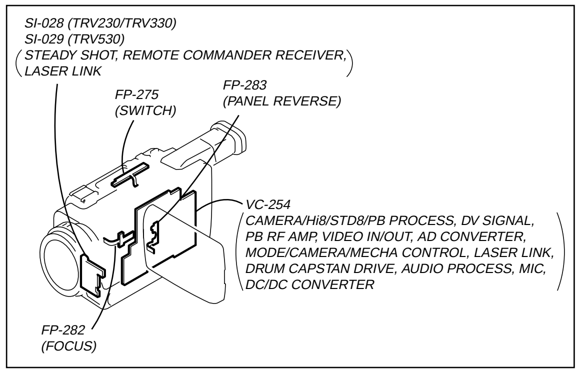
FP-283 (PANEL REVERSE) FLEXIBLE BOARD

— Ref. No. FP-283 Flexible Board; 30,000 Series —
- Refer to page 4-89 for schematic diagram.


FP-283 FLEXIBLE
(SIDE A)
1
6
1-680-133-11
FP-283
1-680-133-
11
S601
(PANEL REVERSE SW)

For printed wiring board
- FP-283 flexible board consists of multiple layers. However, only the sides (layers) A is shown.

There are a few cases that the part printed on this diagram isn't mounted in this model.


SI-028 (TRV230/TRV330)
SI-029 (TRV530)
(STEADY SHOT, REMOTE COMMANDER RECEIVER, LASER LINK)
FP-275 (SWITCH)
FP-283 (PANEL REVERSE)
VC-254
(CAMERA/Hi8/STD8/PB PROCESS, DV SIGNAL, PB RF AMP, VIDEO IN/OUT, AD CONVERTER, MODE/CAMERA/MECHA CONTROL, LASER LINK, DRUM CAPSTAN DRIVE, AUDIO PROCESS, MIC, DC/DC CONVERTER)
FP-282 (FOCUS)

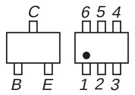
PD-138 (RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE) PRINTED WIRING BOARD (DCR-TRV230/TRV330)

— Ref. No. PD-138 Board; 20,000 Series —

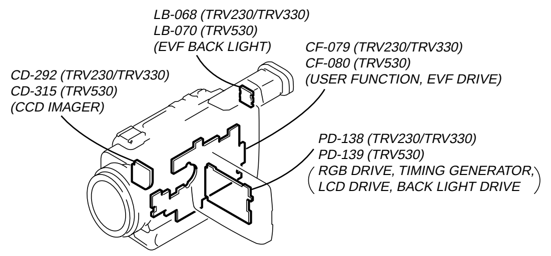
For printed wiring board

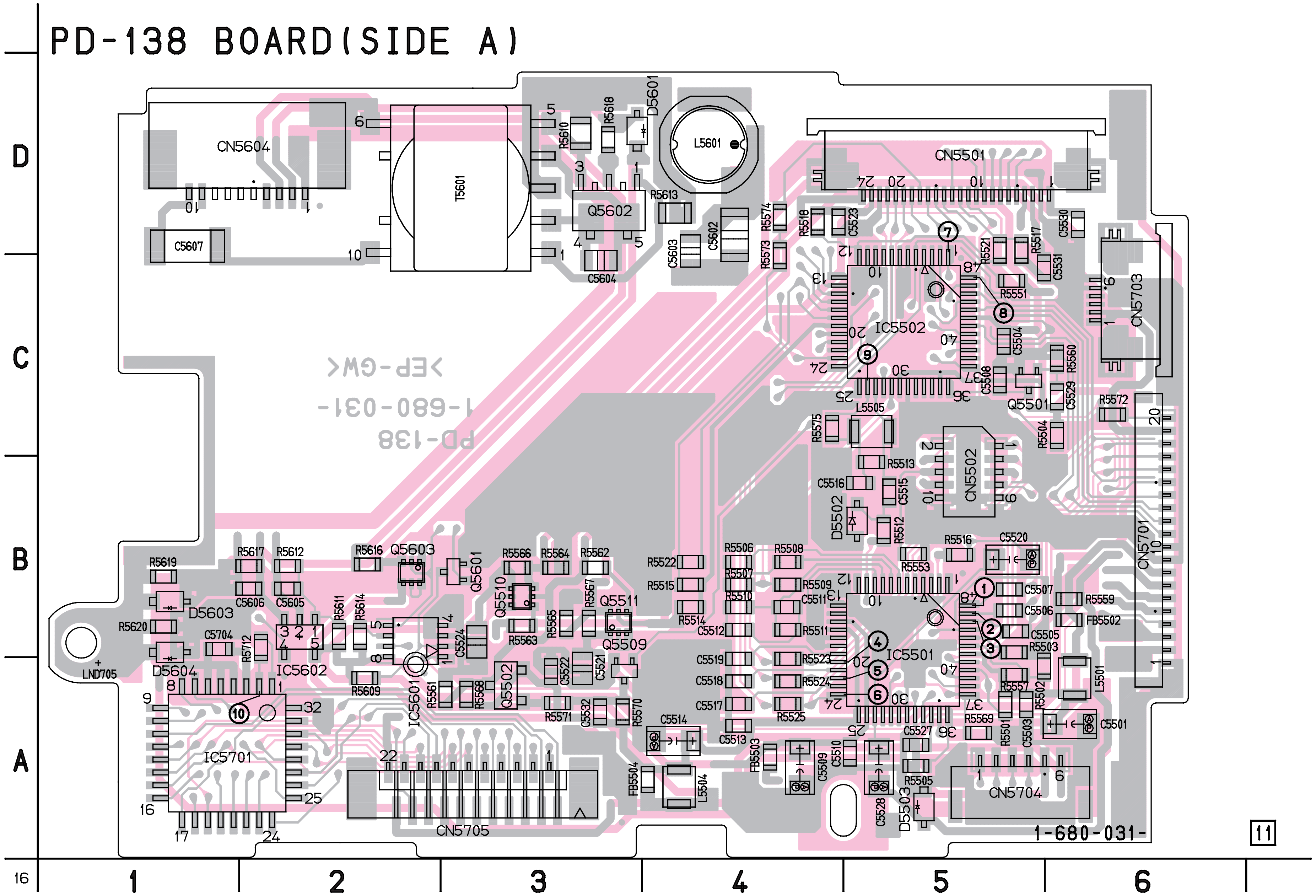
- Refer to page 4-110 for parts location.
- PD-138 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor



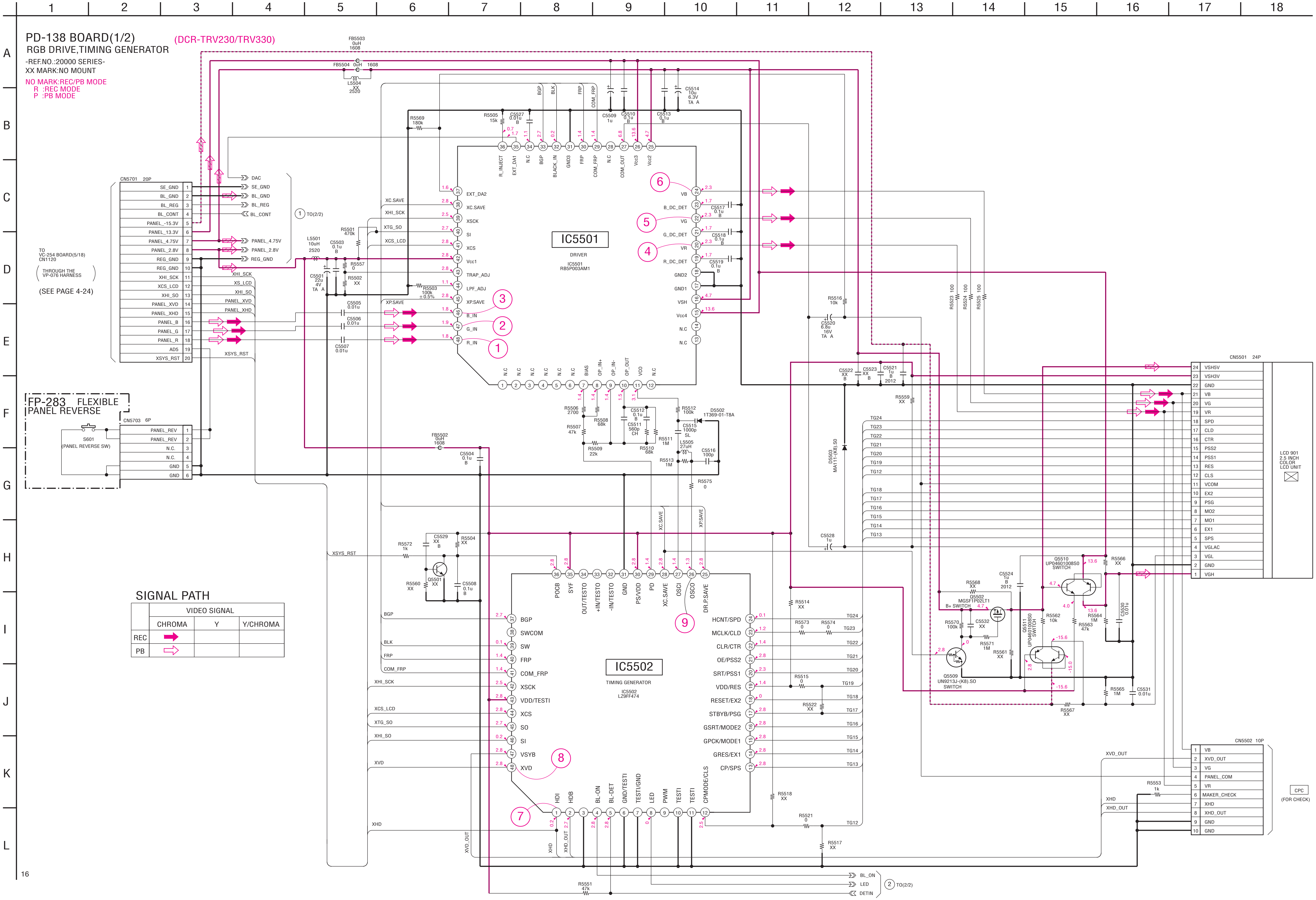
There are a few cases that the part printed on this diagram isn't mounted in this model.


LB-068 (TRV230/TRV330)
LB-070 (TRV530)
(EVF BACK LIGHT)
CF-079 (TRV230/TRV330)
CF-080 (TRV530)
(USER FUNCTION, EVF DRIVE)
CD-292 (TRV230/TRV330)
CD-315 (TRV530)
(CCD IMAGER)
PD-138 (TRV230/TRV330)
PD-139 (TRV530)
RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE


PD-138 BOARD(SIDE A)
D
C
B
A
1
2
3
4
5
6
16
11
CN5604
C5607
T5601
L5601
D5601
Q5602
C5604
CN5501
IC5502
IC5501
CN5502
CN5703
CN5701
Q5501
L5505
D5502
IC5701
IC5602
IC5601
Q5603
Q5601
Q5510
Q5511
Q5509
Q5502
D5603
D5604
CN5705
CN5704
L5501
L5504
D5503
FB5502
FB5503
FB5504
LND705
1-680-031-
PD-138
<EP-GW>

For Schematic Diagram

- Refer to page 4-87 for PD-138 printed wiring board.
- Refer to page 4-86 for printed wiring board of FP-283 flexible.
- Refer to page 4-105 for waveforms.

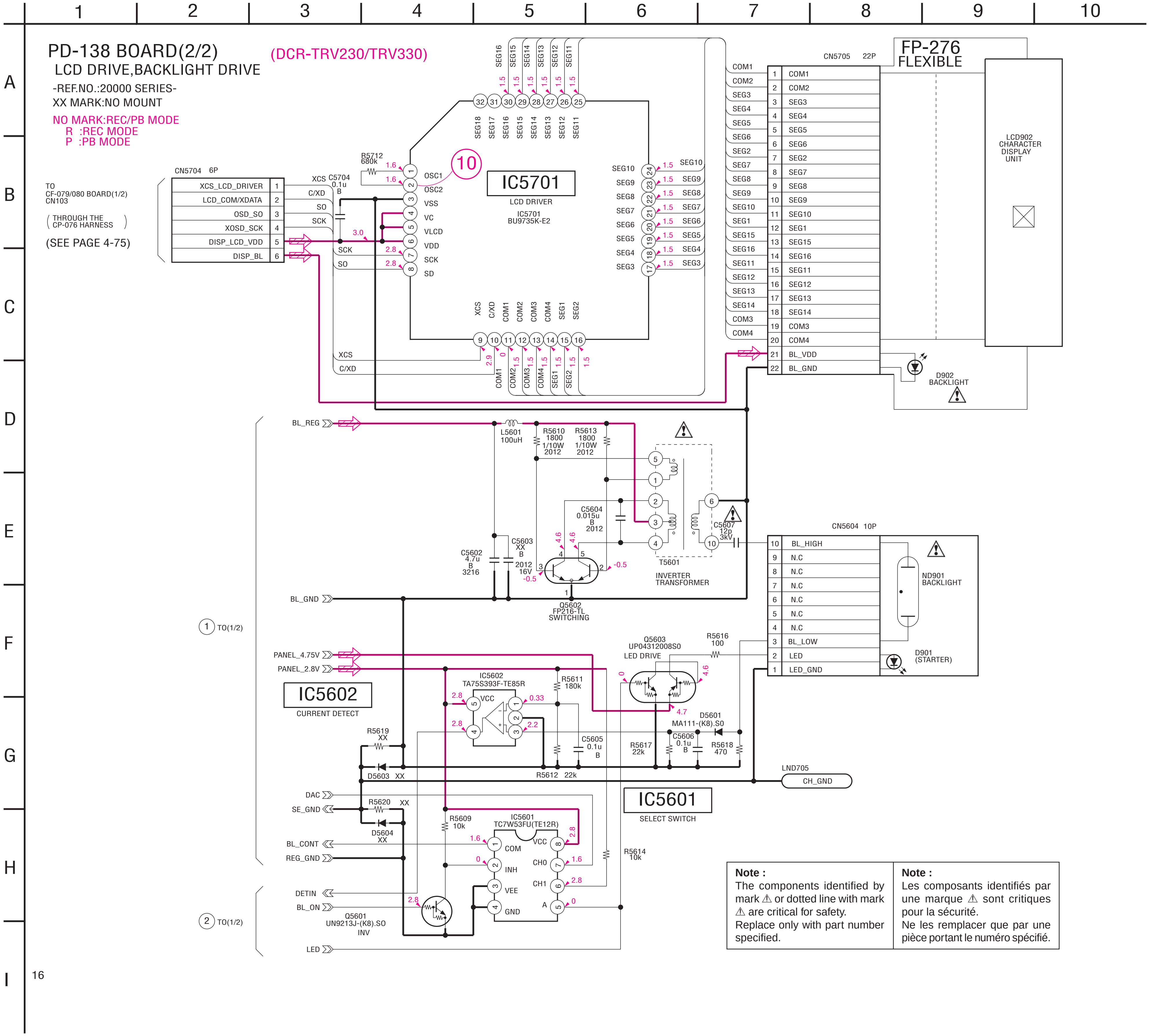

PD-138 BOARD(1/2)
(DCR-TRV230/TRV330)
RGB DRIVE,TIMING GENERATOR
-REF.NO.:20000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC5501
DRIVER
IC5501 RB5P003AM1
IC5502
TIMING GENERATOR
IC5502 LZ9FF474
CN5701 20P
TO VC-254 BOARD(5/18) CN1120
THROUGH THE VP-076 HARNESS
(SEE PAGE 4-24)
FP-283 FLEXIBLE
PANEL REVERSE
CN5703 6P
S601 (PANEL REVERSE SW)
CN5501 24P
LCD 901 2.5 INCH COLOR LCD UNIT
CN5502 10P
CPC (FOR CHECK)
Q5510 UP04601008SO SWITCH
Q5502 MGSF1P02LT1 B+ SWITCH
Q5509 UN9213J-(K8).SO SWITCH
Q5511 UP04601008SO SWITCH
Q5501
D5502 1T369-01-T8A
D5503 MA111-(K8).SO
TO(2/2)
BL_ON
LED
DETIN
16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K L

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

RGB DRIVE, TIMING GENERATOR
PD-138 (1/2)

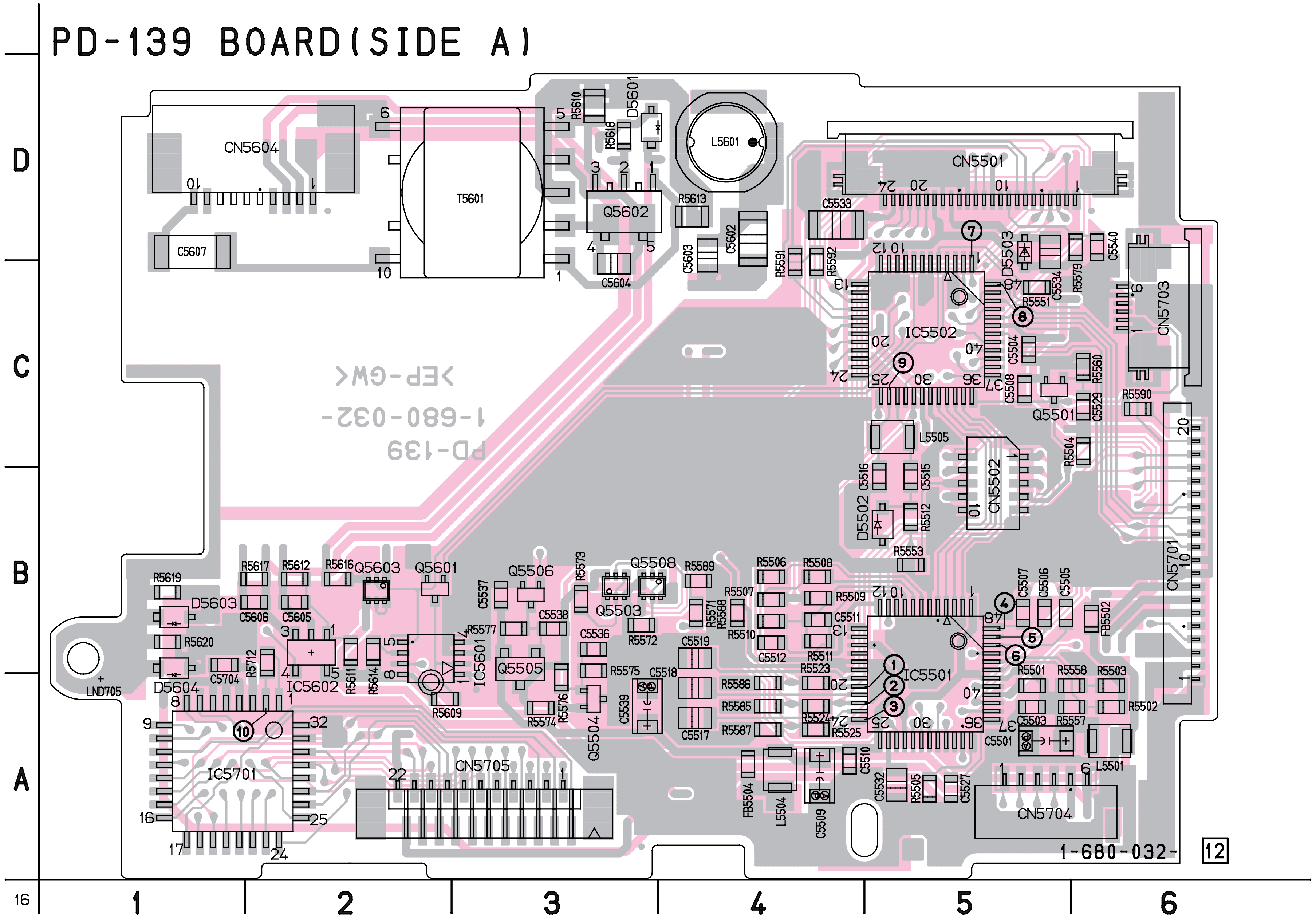
For Schematic Diagram
- Refer to page 4-87 for printed wiring board.
- Refer to page 4-106 for waveform.


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
PD-138 BOARD(2/2)
LCD DRIVE,BACKLIGHT DRIVE
(DCR-TRV230/TRV330)
-REF.NO.:20000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
TO CF-079/080 BOARD(1/2) CN103
(THROUGH THE CP-076 HARNESS)
(SEE PAGE 4-75)
CN5704 6P
XCS_LCD_DRIVER
LCD_COM/XDATA
OSD_SO
XOSD_SCK
DISP_LCD_VDD
DISP_BL
IC5701
LCD DRIVER
IC5701 BU9735K-E2
OSC1
OSC2
VSS
VC
VLCD
VDD
SCK
SD
R5712 680k
C5704 0.1u B
FP-276 FLEXIBLE
CN5705 22P
LCD902 CHARACTER DISPLAY UNIT
COM1
COM2
SEG3
SEG4
SEG5
SEG6
SEG2
SEG7
SEG8
SEG9
SEG10
SEG1
SEG15
SEG16
SEG11
SEG12
SEG13
SEG14
COM3
COM4
BL_VDD
BL_GND
D902 BACKLIGHT
BL_REG
BL_GND
L5601 100uH
R5610 1800 1/10W 2012
R5613 1800 1/10W 2012
C5604 0.015u B 2012
C5602 4.7u B 3216
C5603 XX B 2012 16V
C5607 12p 3kV
T5601 INVERTER TRANSFORMER
Q5602 FP216-TL SWITCHING
CN5604 10P
BL_HIGH
N.C
BL_LOW
LED
LED_GND
ND901 BACKLIGHT
D901 (STARTER)
TO(1/2)
PANEL_4.75V
PANEL_2.8V
IC5602
CURRENT DETECT
IC5602 TA75S393F-TE85R
VCC
R5619 XX
D5603 XX
R5611 180k
C5605 0.1u B
R5612 22k
Q5603 UP04312008S0 LED DRIVE
R5616 100
D5601 MA111-(K8).S0
C5606 0.1u B
R5617 22k
R5618 470
LND705
CH_GND
DAC
SE_GND
BL_CONT
REG_GND
DETIN
BL_ON
LED
R5620 XX
D5604 XX
R5609 10k
IC5601 TC7W53FU(TE12R)
COM
INH
VEE
GND
CH0
CH1
A
IC5601
SELECT SWITCH
R5614 10k
Q5601 UN9213J-(K8).S0 INV
16

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

PD-139 (RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE) PRINTED WIRING BOARD (DCR-TRV530)

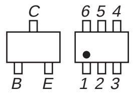
— Ref. No. PD-139 Board; 20,000 Series —


PD-139 BOARD(SIDE A)
D
C
B
A
16
1
2
3
4
5
6
CN5604
C5607
T5601
Q5602
C5604
R5610
R5618
D5601
L5601
R5613
C5603
C5602
CN5501
C5533
R5591
R5592
IC5502
D5503
R5551
C5534
R5579
C5540
CN5703
C5504
C5508
R5560
Q5501
C5529
R5590
L5505
CN5502
R5504
C5516
C5515
D5502
R5512
R5553
CN5701
R5619
D5603
R5620
LND705
D5604
R5617
R5612
R5616
Q5603
Q5601
C5606
C5605
Q5506
R5573
Q5508
R5589
R5506
R5508
Q5503
C5537
C5538
R5507
R5509
C5511
R5571
R5588
R5510
C5536
R5572
C5519
C5512
R5511
R5523
R5577
IC5601
Q5505
R5575
C5518
IC5501
R5586
R5585
R5587
R5524
R5525
C5704
R5712
IC5602
R5611
R5614
R5609
R5574
R5576
Q5504
C5539
C5517
IC5701
CN5705
FB5504
L5504
C5509
C5510
C5532
R5505
C5527
CN5704
L5501
C5501
C5503
R5557
R5501
R5558
R5503
R5502
C5507
C5506
C5505
FB5502
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
1-680-032-
12

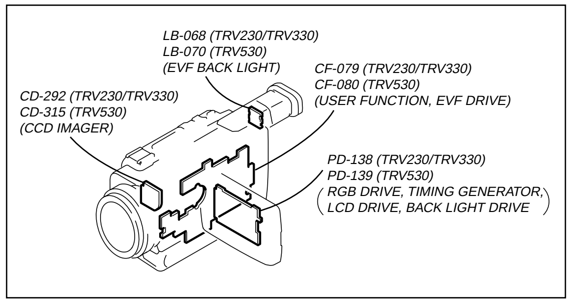
For printed wiring board

- Refer to page 4-111 for parts location.
- PD-139 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

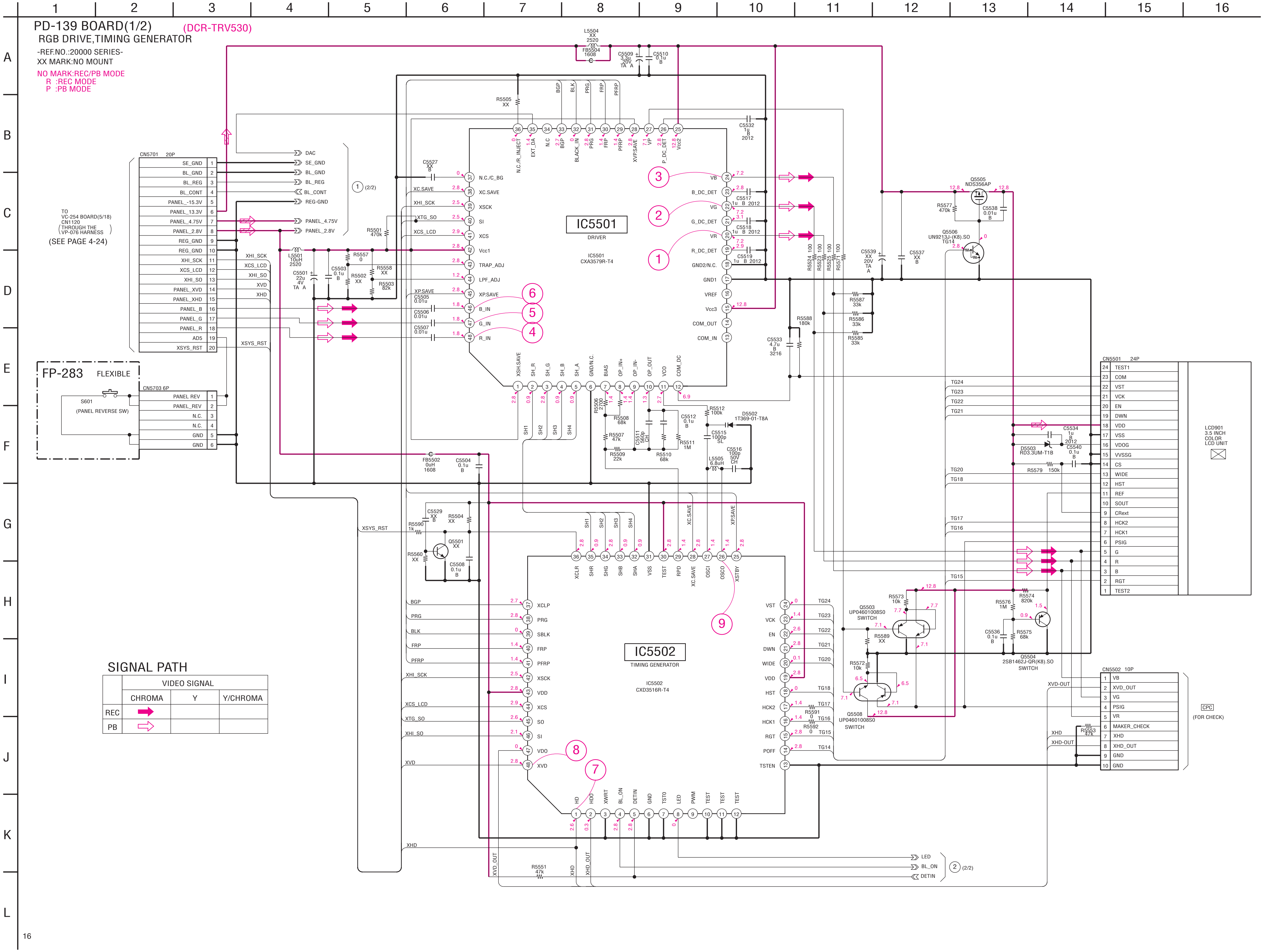
Transistor



There are a few cases that the part printed on this diagram isn't mounted in this model.


LB-068 (TRV230/TRV330)
LB-070 (TRV530)
(EVF BACK LIGHT)
CF-079 (TRV230/TRV330)
CF-080 (TRV530)
(USER FUNCTION, EVF DRIVE)
CD-292 (TRV230/TRV330)
CD-315 (TRV530)
(CCD IMAGER)
PD-138 (TRV230/TRV330)
PD-139 (TRV530)
(RGB DRIVE, TIMING GENERATOR, LCD DRIVE, BACK LIGHT DRIVE)

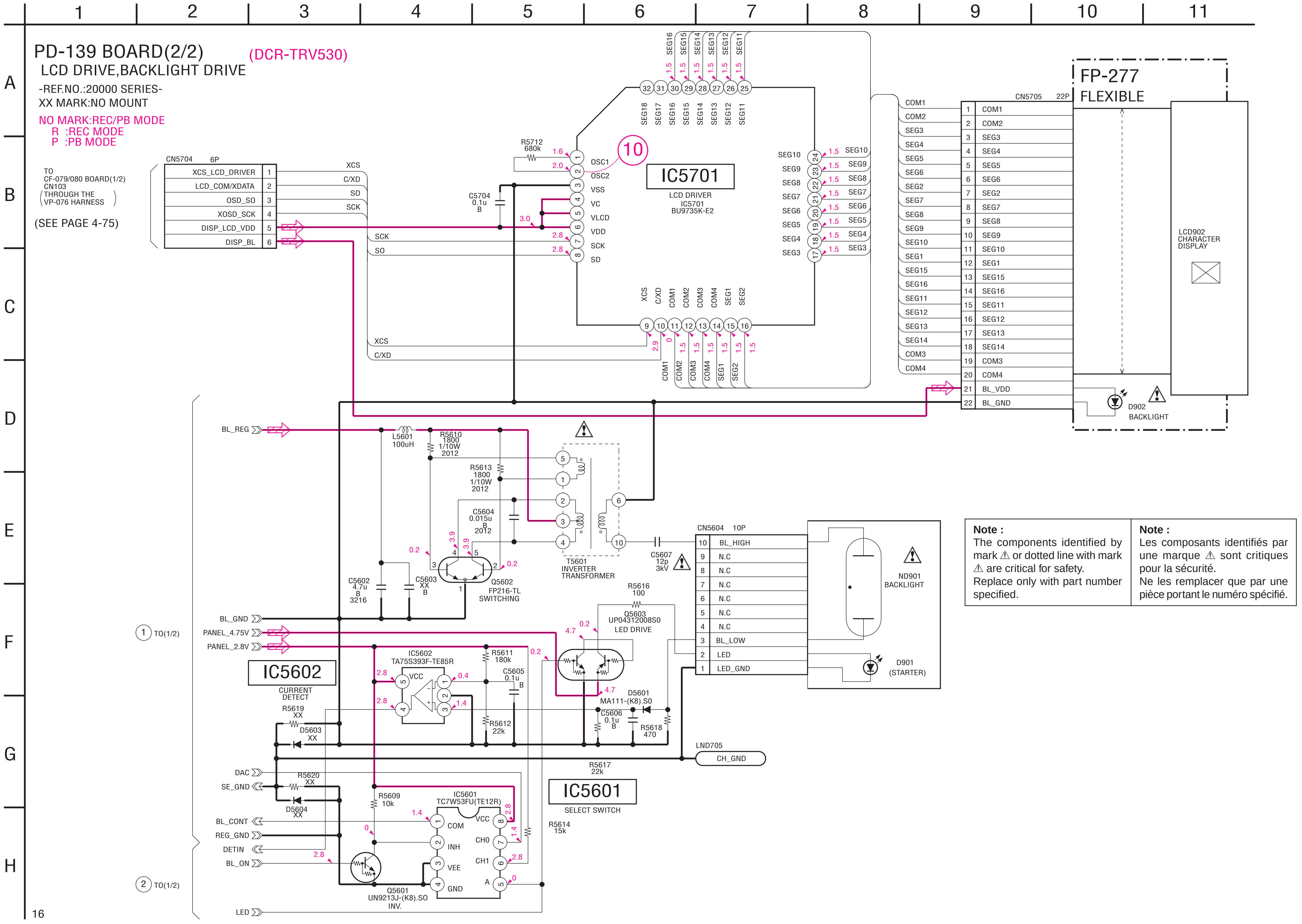
For Schematic Diagram
- Refer to page 4-93 for PD-139 printed wiring board.
- Refer to page 4-86 for printed wiring board of FP-283 flexible.
- Refer to page 4-106 for waveforms.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
L
PD-139 BOARD(1/2)
(DCR-TRV530)
RGB DRIVE,TIMING GENERATOR
-REF.NO.:20000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC5501
DRIVER
IC5501
CXA3579R-T4
IC5502
TIMING GENERATOR
IC5502
CXD3516R-T4
CN5701 20P
TO VC-254 BOARD(5/18) CN1120 (THROUGH THE VP-076 HARNESS)
(SEE PAGE 4-24)
FP-283 FLEXIBLE
CN5703 6P
S601
(PANEL REVERSE SW)
CN5501 24P
LCD901 3.5 INCH COLOR LCD UNIT
CN5502 10P
CPC
(FOR CHECK)
Q5505 NDS356AP
Q5506 UN9213J-(K8).SO
Q5503 UP04601008S0 SWITCH
Q5508 UP04601008S0 SWITCH
Q5504 2SB1462J-QR(K8).SO SWITCH
Q5501 XX
D5502 1T369-01-T8A
D5503 RD3.3UM-T1B
(2/2)
16

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

For Schematic Diagram
- Refer to page 4-93 for printed wiring board.
- Refer to page 4-106 for waveform.

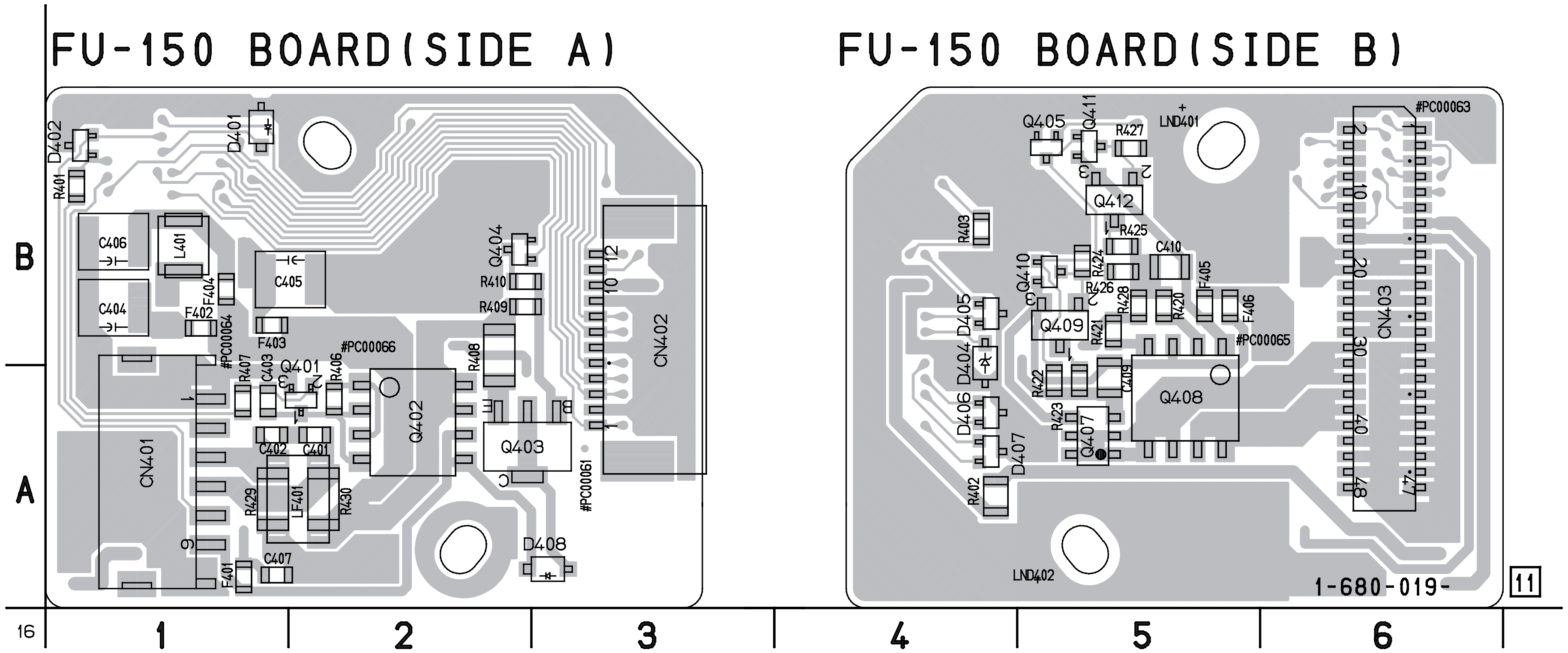

1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H
PD-139 BOARD(2/2)
LCD DRIVE,BACKLIGHT DRIVE
(DCR-TRV530)
-REF.NO.:20000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
TO CF-079/080 BOARD(1/2) CN103 THROUGH THE VP-076 HARNESS
(SEE PAGE 4-75)
CN5704 6P
XCS_LCD_DRIVER
LCD_COM/XDATA
OSD_SO
XOSD_SCK
DISP_LCD_VDD
DISP_BL
XCS
C/XD
SO
SCK
R5712 680k
C5704 0.1u B
10
IC5701
LCD DRIVER IC5701 BU9735K-E2
OSC1 OSC2 VSS VC VLCD VDD SCK SD
SEG18 SEG17 SEG16 SEG15 SEG14 SEG13 SEG12 SEG11
SEG10 SEG9 SEG8 SEG7 SEG6 SEG5 SEG4 SEG3
XCS C/XD COM1 COM2 COM3 COM4 SEG1 SEG2
CN5705 22P
FP-277 FLEXIBLE
COM1 COM2 SEG3 SEG4 SEG5 SEG6 SEG2 SEG7 SEG8 SEG9 SEG10 SEG1 SEG15 SEG16 SEG11 SEG12 SEG13 SEG14 COM3 COM4 BL_VDD BL_GND
LCD902 CHARACTER DISPLAY
D902 BACKLIGHT
BL_REG
L5601 100uH
R5610 1800 1/10W 2012
R5613 1800 1/10W 2012
C5604 0.015u B 2012
C5602 4.7u B 3216
C5603 XX B
Q5602 FP216-TL SWITCHING
T5601 INVERTER TRANSFORMER
C5607 12p 3kV
R5616 100
Q5603 UP04312008S0 LED DRIVE
CN5604 10P
BL_HIGH N.C N.C N.C N.C N.C N.C BL_LOW LED LED_GND
ND901 BACKLIGHT
D901 (STARTER)
BL_GND
PANEL_4.75V
PANEL_2.8V
① TO(1/2)
② TO(1/2)
IC5602
CURRENT DETECT
IC5602 TA75S393F-TE85R
R5611 180k
C5605 0.1u B
R5612 22k
R5619 XX
D5603 XX
D5601 MA111-(K8).S0
C5606 0.1u B
R5618 470
LND705
CH_GND
R5617 22k
IC5601
SELECT SWITCH
R5614 15k
DAC
SE_GND
R5620 XX
D5604 XX
R5609 10k
IC5601 TC7W53FU(TE12R)
COM INH VEE GND VCC CH0 CH1 A
BL_CONT
REG_GND
DETIN
BL_ON
LED
Q5601 UN9213J-(K8).S0 INV.
16

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

LCD DRIVE, BACK LIGHT DRIVE
PD-139 (2/2)

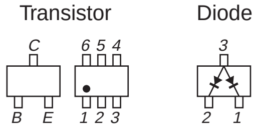
FU-150 (POWER SUPPLY) PRINTED WIRING BOARD (DCR-TRV230/TRV330)
FU-154 (POWER SUPPLY) PRINTED WIRING BOARD (DCR-TRV530)

— Ref. No. FU-150, FU-154 Boards; 1,000 Series —

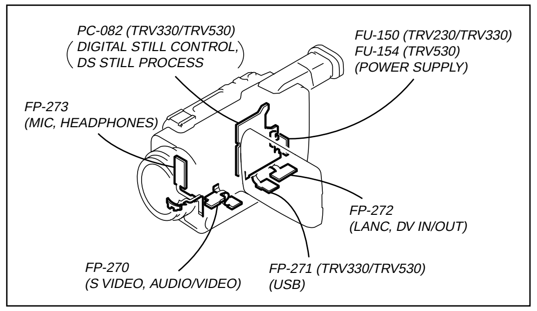

FU-150 BOARD(SIDE A)
FU-150 BOARD(SIDE B)
B
A
16
1
2
3
4
5
6
D402
R401
D401
C406
L401
C404
F404
F402
C405
F403
#PC00064
R407
C403
Q401
R406
#PC00066
Q402
Q403
R408
R410
R409
Q404
CN402
CN401
C402
C401
R429
LF401
R430
#PC00061
D408
F401
C407
Q405
Q411
R427
LND401
#PC00063
Q412
R403
R425
R424
C410
Q410
R426
R428
R420
F405
F406
D405
Q409
R421
#PC00065
D404
R422
C409
Q408
D406
R423
Q407
D407
R402
CN403
LND402
1-680-019-
11

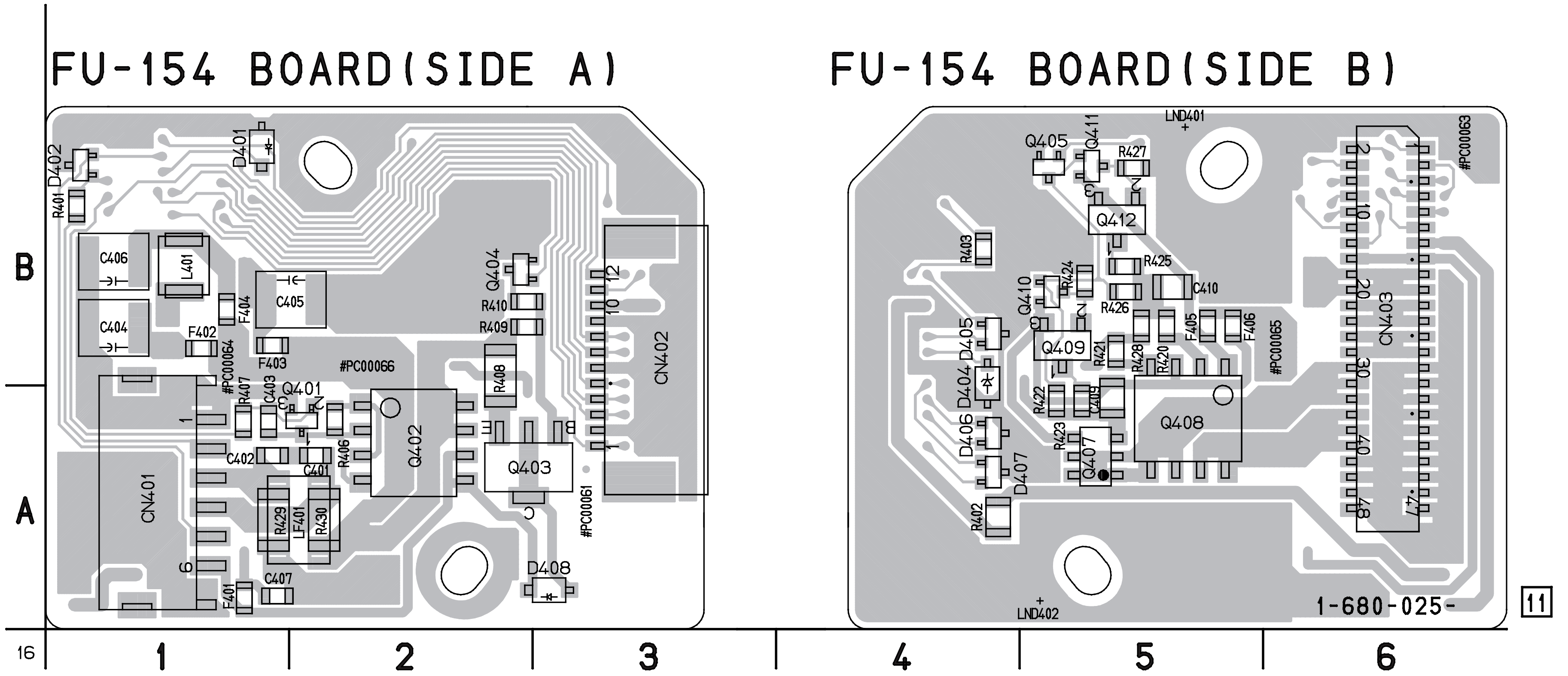
For printed wiring boards

- Refer to page 4-111 for parts location.
- FU-150, FU-154 boards consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

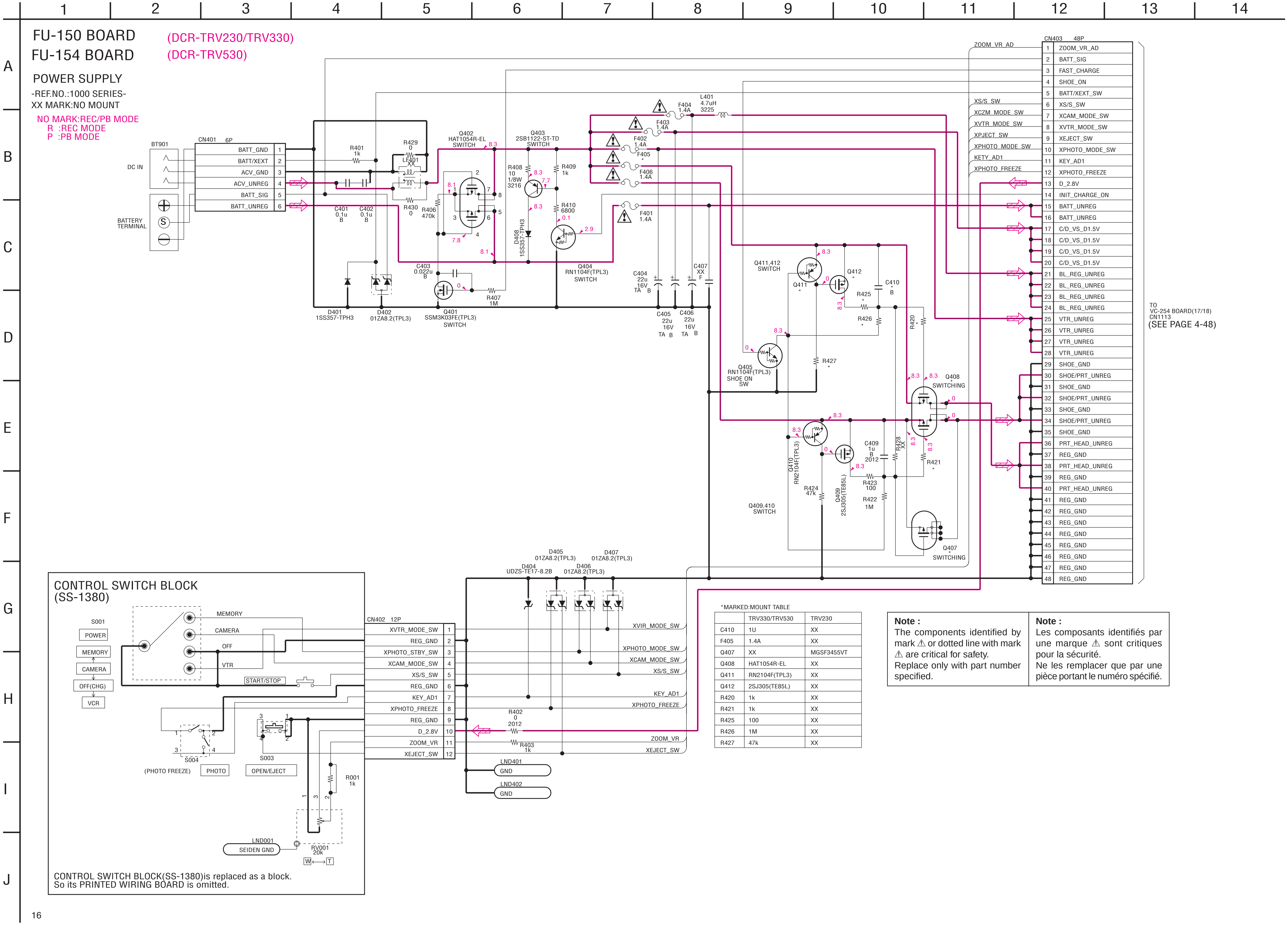

Transistor
Diode
C
6 5 4
3
B
E
1 2 3
2
1

There are a few cases that the part printed on this diagram isn't mounted in this model.


PC-082 (TRV330/TRV530)
(DIGITAL STILL CONTROL,
DS STILL PROCESS
FU-150 (TRV230/TRV330)
FU-154 (TRV530)
(POWER SUPPLY)
FP-273
(MIC, HEADPHONES)
FP-272
(LANC, DV IN/OUT)
FP-270
(S VIDEO, AUDIO/VIDEO)
FP-271 (TRV330/TRV530)
(USB)


FU-154 BOARD(SIDE A)
FU-154 BOARD(SIDE B)
B
A
16
1
2
3
4
5
6
D402
R401
D401
C406
L401
C404
F404
F402
C405
F403
#PC00064
R407
C403
Q401
#PC00066
Q402
Q403
R408
R410
R409
Q404
CN402
CN401
C402
C401
R406
R429
LF401
R430
#PC00061
D408
F401
C407
Q405
Q411
R427
LND401
#PC00063
Q412
R403
R425
R424
C410
Q410
R426
F405
F406
#PC00065
D405
Q409
R421
R428
R420
D404
R422
C409
Q408
D406
R423
Q407
D407
R402
CN403
LND402
1-680-025-
11

For Schematic Diagram
- Refer to page 4-99 for printed wiring board.


FU-150 BOARD (DCR-TRV230/TRV330)
FU-154 BOARD (DCR-TRV530)
POWER SUPPLY
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
BT901
DC IN
BATTERY TERMINAL
CN401 6P
BATT_GND 1
BATT/XEXT 2
ACV_GND 3
ACV_UNREG 4
BATT_SIG 5
BATT_UNREG 6
R401 1k
R429 0
LF401 XX
R430 0
R406 470k
C401 0.1u B
C402 0.1u B
Q402 HAT1054R-EL SWITCH
Q403 2SB1122-ST-TD SWITCH
R408 10 1/8W 3216
R409 1k
R410 6800
D408 1SS357-TPH3
C403 0.022u B
R407 1M
D401 1SS357-TPH3
D402 01ZA8.2(TPL3)
Q401 SSM3K03FE(TPL3) SWITCH
Q404 RN1104F(TPL3) SWITCH
8.3
8.1
7.8
7.7
0.1
2.9
0
F401 1.4A
F402 1.4A
F403 1.4A
F404 1.4A
F405
F406 1.4A
L401 4.7uH 3225
C404 22u 16V TA B
C405 22u 16V TA B
C406 22u 16V TA B
C407 XX F
Q411,412 SWITCH
Q411
Q412
C410 B
R425
R426
R420
R427
Q405 RN1104F(TPL3) SHOE ON SW
Q408 SWITCHING
Q410 RN2104F(TPL3)
Q409 2SJ305(TE85L)
Q409,410 SWITCH
C409 1u B 2012
R428 XX
R421
R423 100
R422 1M
R424 47k
Q407 SWITCHING
ZOOM_VR_AD
XS/S_SW
XCZM_MODE_SW
XVTR_MODE_SW
XPJECT_SW
XPHOTO_MODE_SW
KETY_AD1
XPHOTO_FREEZE
CN403 48P
1 ZOOM_VR_AD
2 BATT_SIG
3 FAST_CHARGE
4 SHOE_ON
5 BATT/XEXT_SW
6 XS/S_SW
7 XCAM_MODE_SW
8 XVTR_MODE_SW
9 XEJECT_SW
10 XPHOTO_MODE_SW
11 KEY_AD1
12 XPHOTO_FREEZE
13 D_2.8V
14 INIT_CHARGE_ON
15 BATT_UNREG
16 BATT_UNREG
17 C/D_VS_D1.5V
18 C/D_VS_D1.5V
19 C/D_VS_D1.5V
20 C/D_VS_D1.5V
21 BL_REG_UNREG
22 BL_REG_UNREG
23 BL_REG_UNREG
24 BL_REG_UNREG
25 VTR_UNREG
26 VTR_UNREG
27 VTR_UNREG
28 VTR_UNREG
29 SHOE_GND
30 SHOE/PRT_UNREG
31 SHOE_GND
32 SHOE/PRT_UNREG
33 SHOE_GND
34 SHOE/PRT_UNREG
35 SHOE_GND
36 PRT_HEAD_UNREG
37 REG_GND
38 PRT_HEAD_UNREG
39 REG_GND
40 PRT_HEAD_UNREG
41 REG_GND
42 REG_GND
43 REG_GND
44 REG_GND
45 REG_GND
46 REG_GND
47 REG_GND
48 REG_GND
TO VC-254 BOARD(17/18) CN1113
(SEE PAGE 4-48)
D404 UDZS-TE17-8.2B
D405 01ZA8.2(TPL3)
D406 01ZA8.2(TPL3)
D407 01ZA8.2(TPL3)
CONTROL SWITCH BLOCK (SS-1380)
S001
POWER
MEMORY
CAMERA
OFF(CHG)
VCR
MEMORY
CAMERA
OFF
VTR
START/STOP
S004
(PHOTO FREEZE)
PHOTO
S003
OPEN/EJECT
R001 1k
LND001 SEIDEN GND
RV001 20k
W T
CN402 12P
XVTR_MODE_SW 1
REG_GND 2
XPHOTO_STBY_SW 3
XCAM_MODE_SW 4
XS/S_SW 5
REG_GND 6
KEY_AD1 7
XPHOTO_FREEZE 8
REG_GND 9
D_2.8V 10
ZOOM_VR 11
XEJECT_SW 12
XVIR_MODE_SW
XPHOTO_MODE_SW
XCAM_MODE_SW
XS/S_SW
KEY_AD1
XPHOTO_FREEZE
ZOOM_VR
XEJECT_SW
R402 0 2012
R403 1k
LND401 GND
LND402 GND
CONTROL SWITCH BLOCK(SS-1380)is replaced as a block.
So its PRINTED WIRING BOARD is omitted.
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J

*MARKED:MOUNT TABLE

	TRV330/TRV530	TRV230
C410	1U	XX
F405	1.4A	XX
Q407	XX	MGSF3455VT
Q408	HAT1054R-EL	XX
Q411	RN2104F(TPL3)	XX
Q412	2SJ305(TE85L)	XX
R420	1k	XX
R421	1k	XX
R425	100	XX
R426	1M	XX
R427	47k	XX

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

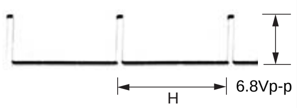
Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

16

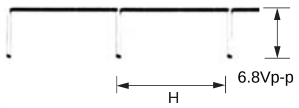
4-3. WAVEFORMS

CD-292/315 BOARD
CAMERA REC

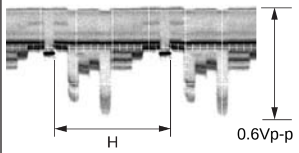
① IC501 ①,②



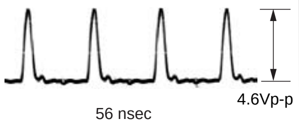
② IC501 ③,④



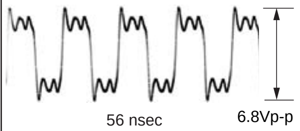
③ IC501 ⑦



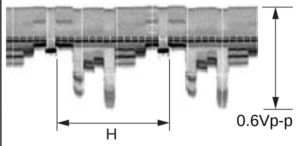
④ IC501 ⑫



⑤ IC501 ⑬,⑭

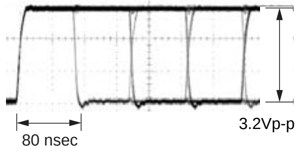


⑥ Q501 Ⓔ

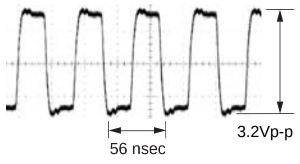


VC-254 BOARD

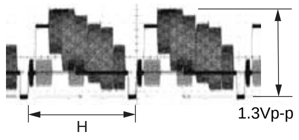
① IC1502 ② – ⑪
REC



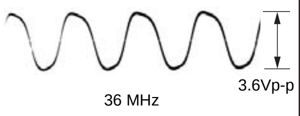
② IC1502 ⑯



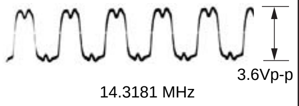
③ IC1502 ㉞
REC



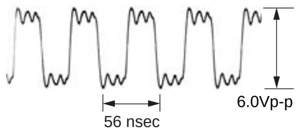
④ IC1501 ⑤
CAMERA REC/PB



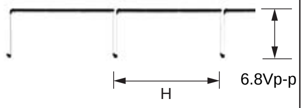
⑤ IC1501 ⑪
CAMERA REC/PB



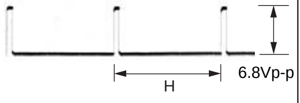
⑥ IC1501 ㉑
CAMERA REC



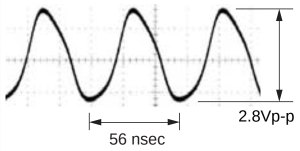
⑦ IC1501 ㉖
CAMERA REC



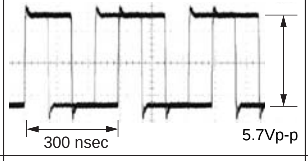
⑧ IC1501 ㉘
CAMERA REC



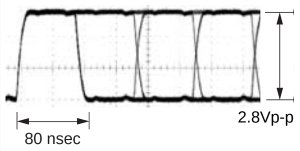
⑨ IC2201 (67)
CAMERA REC/PB



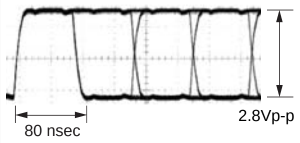
⑩ IC2201 (79)
CAMERA REC/PB



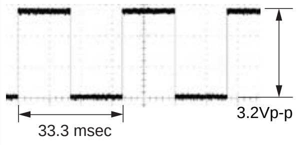
⑪ IC2201 (112),(114),(117),(119)
CAMERA REC



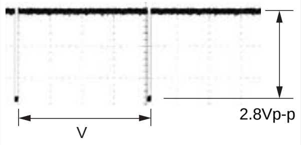
⑫ IC2201 (122),(124),(127),(129),(132),
(134),(137),(139) CAMERA REC



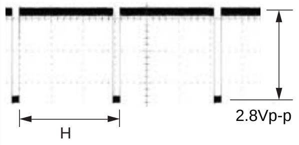
⑬ IC2201 (142)
CAMERA REC



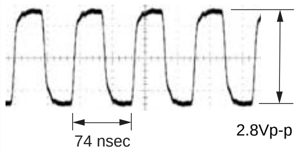
⑭ IC2201 (144)
CAMERA REC



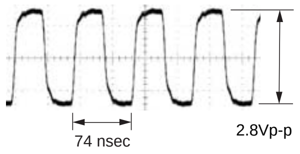
⑮ IC2201 (146)
CAMERA REC



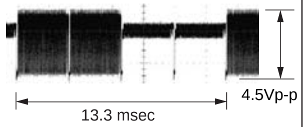
⑯ IC2201 (185)
CAMERA REC/PB



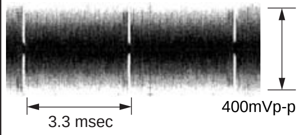
⑰ IC2201 (198)
CAMERA REC/PB



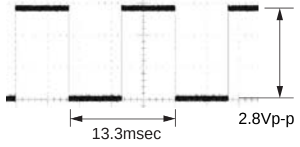
⑱ IC3103 ①,②,⑥,⑦
CAMERA REC



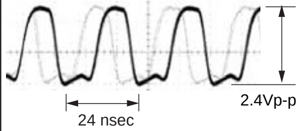
⑲ IC3101 ㊷, IC3103 ㉗,㉙
CAMERA PB



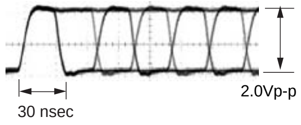
⑳ IC3103 ㉟
CAMERA REC/PB



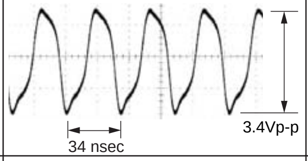
㉑ IC3103 ㊵
CAMERA REC



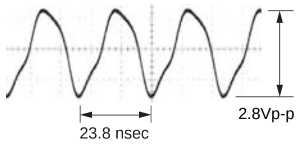
㉒ IC3103 ㊷
CAMERA REC



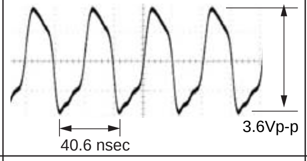
㉓ IC3301 ㊺
CAMERA REC/PB



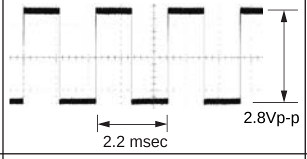
㉔ IC3301 (113)
CAMERA REC/PB



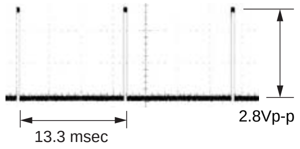
㉕ IC3301 (139)
CAMERA REC/PB



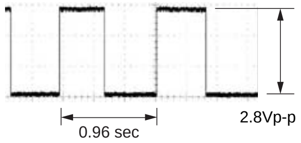
㉖ IC4401 ⑯
CAMERA REC/PB



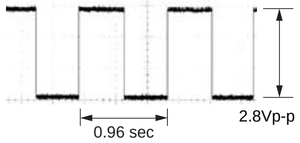
㉗ IC4401 ㉒
CAMERA REC/PB



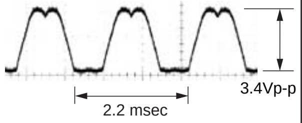
㉘ IC4401 ㉝
CAMERA REC/PB



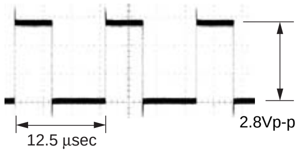
㉙ IC4401 ㊶
CAMERA REC/PB



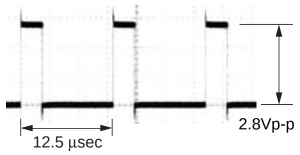
㉚ IC4401 (57),(59),(61)
CAMERA REC/PB



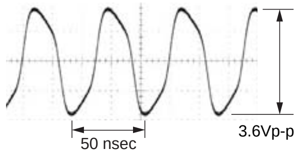
㉛ IC4501 (68)
CAMERA REC/PB



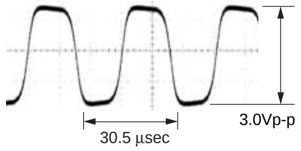
㉜ IC4501 (69)
CAMERA REC/PB



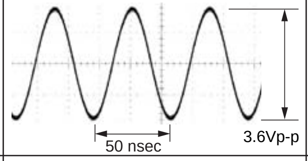
㉝ IC4803 ㊵
CAMERA REC/PB



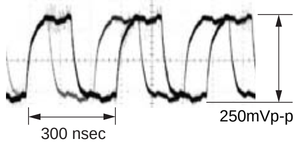
㉞ IC4803 (53)
CAMERA REC/PB



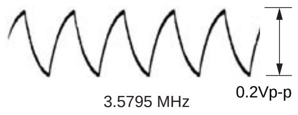
㉟ IC4902 ①
CAMERA REC/PB



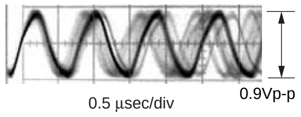
㊱ IC5701 ⑭
CAMERA REC/PB



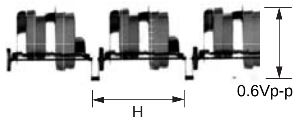
㊲ IC3901 ⑦
CAMERA REC/PB



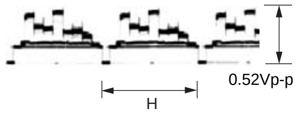
㊳ IC3901 ㉒
CAMERA REC/PB
IR ON



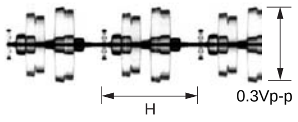
㊴ IC3901 ㊶
CAMERA REC/PB
IR ON



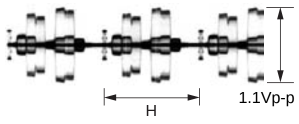
㊵ IC3701 ㊻
CAMERA REC/PB
AV JACK or S JACK IN



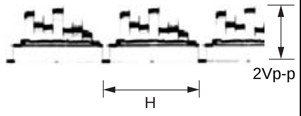
㊶ IC3701 ⑦
CAMERA REC/PB
S JACK IN



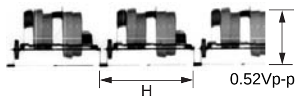
㊷ IC3701 ⑭
CAMERA REC/PB
S JACK IN



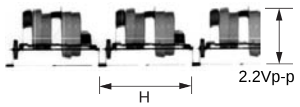
㊸ IC3701 ⑱
CAMERA REC/PB
S JACK IN



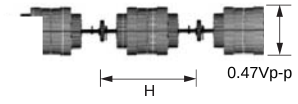
㊹ IC3701 ㉔
IR ON



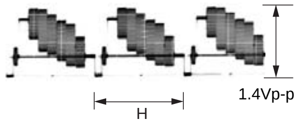
㊺ IC3701 ㉒
CAMERA REC/PB
AV JACK IN



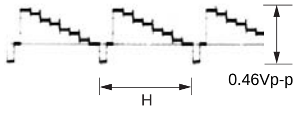
㊻ IC3701 ㉞
LINE REC



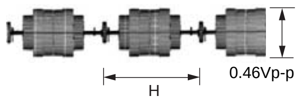
㊼ IC3701 ㊱
LINE REC



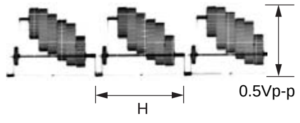
㊽ IC3701 ㊴
LINE REC (S-Y IN)



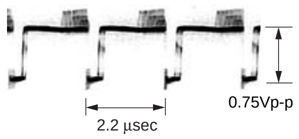
㊾ IC3701 ㊽
LINE REC (S-C IN)



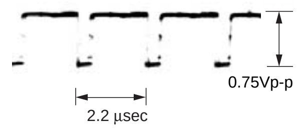
㊿ IC3701 ㊷
LINE REC (VIDEO IN)



(51) IC1301 (58)
CAMERA REC/PB

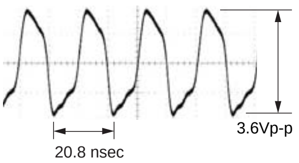


(52) IC1301 (64)
CAMERA REC/PB



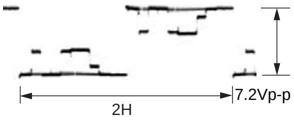
PC-082 BOARD

① IC1155 (134)

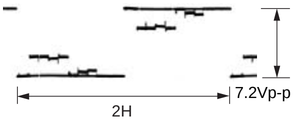


CF-079/080 BOARD
REC/PB

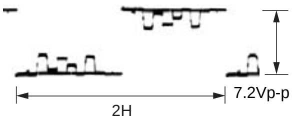
① IC201 ⑳



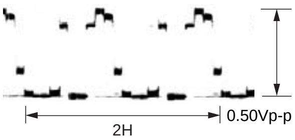
② IC201 ㉒



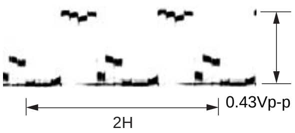
③ IC201 ㉔



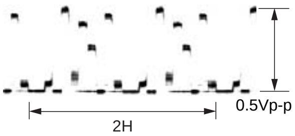
④ IC201 ㊽



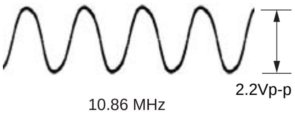
⑤ IC201 ㊼



⑥ IC201 ㊻

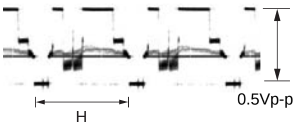


⑦ IC202 ㉖

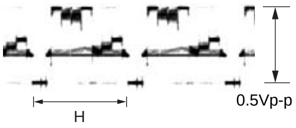


PD-138 BOARD (1/2)

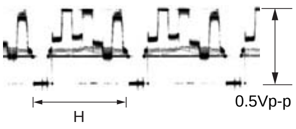
① IC5501 ㊽



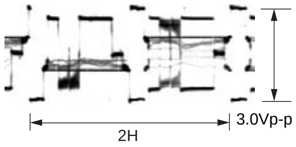
② IC5501 ㊼



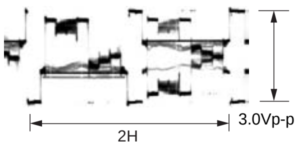
③ IC5501 ㊻



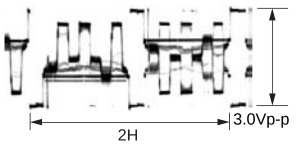
④ IC5501 ⑳



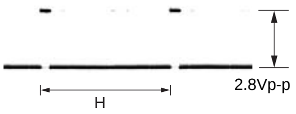
⑤ IC5501 ㉒



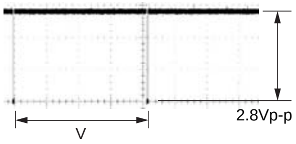
⑥ IC5501 ㉔



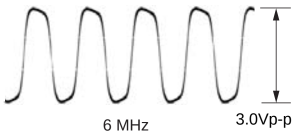
⑦ IC5502 ①



⑧ IC5502 ㊽



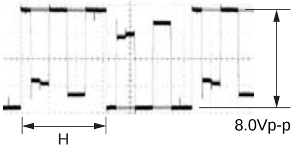
⑨ IC5502 ㉖



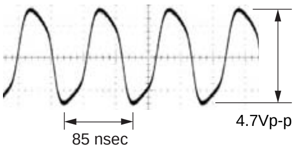
PD-139 BOARD (1/2)

REC/PB

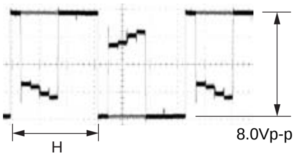
① IC5501 ⑳



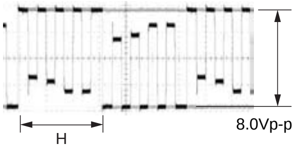
⑨ IC5502 ㉖



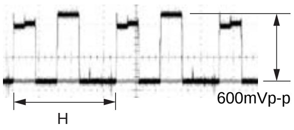
② IC5501 ㉒



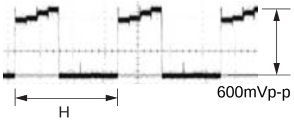
③ IC5501 ㉔



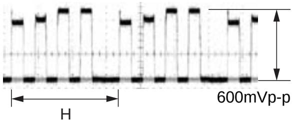
④ IC5501 ㊽



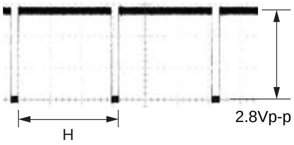
⑤ IC5501 ㊼



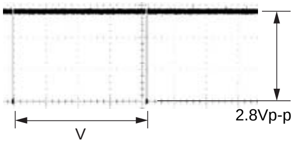
⑥ IC5501 ㊻



⑦ IC5502 ①

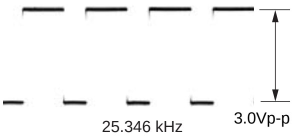


⑧ IC5502 ㊽



PD-138/139 BOARD (2/2)

⑩ IC5701 ②



4-4. MOUNTED PARTS LOCATION

CD-292/315 BOARD (SIDE A)

C502	B-1
C503	A-1
C507	B-2
C508	A-1
C509	B-1
C510	A-1
C511	A-1
D001	A-1
FB5501	B-2
FB5502	B-1
L502	B-1
Q501	A-1
R501	A-1
R503	B-2
R504	A-1
R505	B-1
R506	A-1

CD-292/315 BOARD (SIDE B)

CN501	A-4
IC501	B-4

VC-254 BOARD (SIDE A)

C1320	B-6
C1328	B-8
C1333	B-6
C1334	C-6
C1336	A-6
C1337	A-8
C1338	B-8
C1340	B-6
C1342	B-8
C1343	A-6
C1347	A-6
C1356	A-6
C1357	B-9
C1358	A-9
C1359	A-8
C1362	A-8
C1508	F-4
C1513	F-3
C1514	E-3
C1515	F-3
C1516	E-3
C1517	E-3
C1518	E-3
C1519	E-3
C1520	E-3
C1521	E-4
C1522	E-4
C1523	E-3
C1524	F-4
C1525	F-3
C1526	F-4
C1551	C-2
C1554	C-2
C1556	C-2
C1561	D-4
C1563	D-3
C1569	D-2
C2002	A-2
C2003	A-1
C2005	A-2
C2006	A-2
C2007	A-1
C2008	B-2
C2009	A-1
C2010	B-2
C2011	A-2
C2012	A-1
C2014	B-1
C2015	B-2
C2016	A-1
C2017	A-1
C2201	C-3
C2202	C-3
C2203	D-4
C2204	D-4
C2208	D-3
C2210	D-4
C2211	D-4
C2212	C-4
C2213	D-4
C2214	E-4
C2215	D-4
C2222	D-4
C2223	D-4
C2224	D-4
C2225	E-4
C2226	D-4
C2227	D-4
C2228	E-4
C2229	D-4
C2230	C-4
C2231	C-4
C2232	F-4
C2233	F-4
C2234	C-4
C2235	C-4
C2236	F-5
C2238	F-6
C2240	F-6
C2242	D-7
C2243	E-7
C2244	F-5
C2247	C-5
C2250	F-5
C2251	C-6
C3121	F-5
C3122	F-5
C3123	F-4
C3124	F-4
C3126	F-5
C3127	F-5
C3128	G-4
C3129	G-4
C3131	F-5
C3133	F-5
C3134	F-6
C3135	F-6
C3136	F-6
C3138	F-5
C3139	G-6
C3140	F-5
C3601	B-4
C3603	B-4
C3604	B-3
C3608	B-4
C3610	A-6
C3611	B-5
C3612	B-5
C3614	B-5
C3615	B-5
C3616	B-5
C3617	B-5
C3618	B-5
C3619	B-5
C3620	B-5
C3622	B-4
C3626	B-6
C3629	B-6
C3631	C-4
C3633	C-4
C3634	C-5
C3636	B-4
C3701	C-4
C3702	B-3
C3704	B-4
C3705	C-4
C3706	C-4
C3707	C-4
C3708	B-4
C3709	B-4
C3710	C-4
C3711	B-4
C3712	C-4
C3714	C-4
C3715	C-4
C3716	C-4
C3717	B-4
C3719	C-3
C3723	C-3
C3724	C-3
C3728	B-3
C3729	C-3
C3730	C-3
C3731	C-3
C3732	B-2
C3733	C-2
C3734	B-3
C3735	B-3
C4401	F-7
C4402	G-3
C4403	F-7
C4404	F-7
C4405	F-7
C4406	F-7
C4407	F-7
C4408	E-7
C4409	F-7
C4410	G-4
C4411	F-7
C4412	F-7
C4413	F-7
C4414	G-3
C4415	E-7
C4416	E-7
C4417	F-7
C4418	E-7
C4419	F-7
C4420	E-7
C4421	F-7
C4422	E-7
C4423	E-7
C4424	F-7
C4425	E-7
C4426	E-7
C4427	E-8
C4428	F-8
C4429	F-8
C4430	F-8
C4431	F-8
C4432	E-8
C4433	F-8
C4434	F-8
C4435	F-8
C4436	E-8
C4437	G-6
C4438	G-6
C4439	F-6
C4902	C-8
C4905	D-7
C4906	D-7
C4907	E-7
C4908	E-8
C4909	E-8
C4910	D-8
C4911	D-8
C5711	A-2
C5712	A-3
CN1104	C-6
CN1106	E-9
CN1113	C-8
CN1114	A-8
CN1115	A-2
CN1116	B-1
CN1117	A-4
CN1120	C-2
CN1501	F-4
CN1551	D-2
CN3101	G-5
CN4401	F-8
CN4402	G-7
CN4403	G-6
CN4404	G-3
D1301	B-8
D1302	A-8
D1305	C-8
D1306	A-8
D1551	C-2
D1552	D-3
D1553	D-3
D2201	C-4
D2202	C-4
D4401	F-6
FB1504	F-4
FB1506	F-3
FB2202	F-6
FB2203	D-4
FB2204	C-4
FB2205	F-6
FB3601	C-4
FB3701	C-3
FB4901	C-8
IC1303	B-9
IC1502	E-4
IC1553	D-3
IC2001	A-1
IC2201	E-5
IC2202	C-5
IC3103	F-5
IC3603	B-5
IC3701	B-3
IC4401	F-7
IC4402	F-6
IC4901	C-8
IC4902	D-8
L1301	B-7
L1302	A-7
L1303	B-7
L1304	B-7
L1305	A-7
L1306	A-6
L1307	B-6
L1308	B-6
L1309	B-6
L1310	C-6
L1317	B-7
L1318	A-6
L1319	B-6
L1320	A-6
L1501	F-4
L1551	D-3
L1552	D-2
L2001	A-2
L2201	D-4
L2202	F-4
L2203	E-4
L2204	C-3
L2207	C-4
L2208	C-5
L2209	F-6
L3104	F-5
L3105	F-6
L3106	F-6
L3601	B-3
L3602	B-5
L3701	C-3
L3705	B-3
Q1104	B-4
Q1301	B-8
Q1314	A-8
Q1333	A-8
Q1551	C-2
Q1555	D-2
Q2207	C-3
Q3103	G-4
Q3104	F-5
Q3111	F-5
Q3116	G-5
Q3117	F-6
Q3118	F-4
Q3601	B-4
Q3602	B-4
Q3701	C-4
Q3702	B-3
Q3703	B-3
Q3704	C-3
Q3705	B-3
Q4401	G-3
Q4402	E-8
Q4901	D-7
Q5717	A-2
R1105	E-7
R1106	E-7
R1107	E-7
R1108	D-7
R1109	D-7
R1110	D-7
R1111	D-7
R1112	D-7
R1113	D-7
R1114	D-7
R1115	D-7
R1116	D-7
R1117	C-5
R1118	C-5
R1119	C-5
R1120	C-5
R1121	C-6
R1122	C-6
R1123	C-6
R1127	E-8
R1128	E-8
R1131	E-8
R1132	E-8
R1134	C-7
R1145	C-7
R1146	C-7
R1147	C-7
R1148	C-8
R1316	A-9
R1319	A-8
R1320	A-8
R1350	A-6
R1369	A-8
R1370	A-8
R1519	F-4
R1520	F-4
R1521	F-3
R1551	C-2
R1552	C-3
R1555	D-2
R1556	C-2
R1557	D-2
R1560	D-2
R2001	A-2
R2002	A-1
R2003	A-2
R2004	A-1
R2005	A-2
R2006	A-2
R2007	A-1
R2008	A-1
R2009	A-2
R2010	A-1
R2205	C-3
R2206	C-4
R2209	D-4
R2210	D-4
R2213	C-3
R2215	D-4
R2216	D-4
R2218	D-4
R2219	D-4
R2220	D-4
R2221	D-4
R2222	C-4
R2223	D-4
R2224	E-4
R2226	E-4
R2227	E-4
R2228	F-4
R2229	C-5
R2230	C-5
R2231	C-5
R2240	D-4
R2241	C-4
R2242	C-4
R2243	C-4
R2244	F-4
R2245	F-5
R2247	C-5
R2248	C-5
R2255	C-6
R2256	C-5
R3114	G-4
R3115	F-4
R3117	F-4
R3118	F-4
R3119	F-4
R3120	F-4
R3121	F-4
R3122	F-4
R3123	F-6
R3124	G-6
R3125	G-5
R3126	F-6
R3127	F-6
R3129	G-5
R3130	G-5
R3131	G-5
R3132	F-5
R3133	G-5
R3136	F-5
R3137	F-5
R3138	F-5
R3143	F-5
R3144	G-5
R3607	B-4
R3608	B-4
R3611	B-4
R3617	B-4
R3622	B-4
R3656	C-6
R3657	B-4
R3658	B-4
R3659	B-4
R3660	B-4
R3701	C-4
R3702	C-4
R3704	C-4
R3705	C-4
R3706	B-3
R3707	C-3
R3708	B-3
R3712	C-4
R3713	C-3
R3714	B-4
R3715	B-3
R3716	B-4
R3717	B-3
R3721	B-4
R3722	C-4
R3724	C-4
R3726	C-3
R3727	B-3
R3728	B-3
R3729	C-3
R3730	B-3
R4401	G-6
R4402	G-6
R4405	G-6
R4407	G-3
R4411	G-3
R4414	G-3
R4416	G-3
R4417	E-7
R4419	E-7
R4420	F-7
R4421	F-7
R4422	F-7
R4423	E-7
R4424	E-7
R4425	F-7
R4426	F-7
R4427	E-7
R4430	E-8
R4431	E-7
R4432	E-8
R4434	F-8
R4435	F-8
R4436	E-8
R4447	G-3
R4448	G-3
R4449	F-6
R4453	G-7
R4901	D-7
R4903	E-7
R4904	C-8
R4906	E-7
R4908	C-7
R4910	C-7
R4911	C-8
R4912	C-8
R4913	C-8
R4915	E-8
R4916	E-8
R4917	C-8
R4918	D-8
R4922	D-8
R4923	E-8
R4924	E-8
R4925	D-8
R4926	D-9
R4927	D-8
R4928	D-8
R4929	D-8
R4930	D-9
R4931	D-9
R4932	D-8
R4935	E-8
R4936	E-7
R4943	E-8
R4944	E-8
R5711	A-2
R5712	A-2
R5742	A-3
R5743	A-2
RB4402	G-5
RB4903	D-8
T1301	B-8

VC-254 BOARD (SIDE B)

C1101	E-16
C1102	F-16
C1104	E-16
C1301	B-10
C1302	B-10
C1303	B-10
C1304	B-10
C1305	B-10
C1306	B-10
C1307	B-10
C1308	C-10
C1309	A-10
C1310	C-10
C1311	A-10
C1312	C-11
C1313	A-11
C1314	C-11
C1315	A-11
C1316	B-11
C1317	B-11
C1318	B-11
C1319	B-11
C1321	B-12
C1322	B-13
C1323	B-12
C1324	C-11
C1326	B-12
C1327	A-12
C1329	B-12
C1330	B-12
C1331	A-12
C1332	B-12
C1335	B-13
C1339	A-13
C1341	B-13
C1344	B-12
C1345	B-13
C1346	A-13
C1348	A-13
C1350	A-11
C1352	A-11
C1354	A-11
C1355	C-12
C1360	C-13
C1363	C-12
C1501	F-15
C1502	F-15
C1503	F-15
C1504	F-15
C1505	F-15
C1506	F-15
C1507	G-15
C1509	G-15
C1510	G-15
C1511	F-15
C1512	G-16
C1552	D-17
C1558	D-16
C1559	D-16
C1560	D-17
C1562	D-17
C1564	D-17
C1565	D-16
C1566	D-16
C1567	D-17
C1568	D-16
C1570	D-17
C1571	D-17
C1572	D-16
C2291	C-15
C2292	D-15
C2293	D-15
C3102	F-14
C3104	F-13
C3105	F-14
C3107	F-14
C3108	G-13
C3109	F-15
C3110	F-15
C3111	G-14
C3112	F-15
C3113	F-14
C3114	F-14
C3115	G-14
C3116	G-14
C3117	G-14
C3119	G-14
C3120	G-14
C3137	G-14
C3141	G-14
C3142	G-14
C3143	G-14
C3144	G-14
C3202	F-13
C3203	F-12
C3204	F-13
C3205	F-13
C3206	F-13
C3207	F-13
C3208	F-13
C3210	F-13
C3211	F-13
C3212	F-13
C3213	F-13
C3214	F-13
C3215	F-13
C3216	F-12
C3217	F-13
C3218	F-12
C3301	C-15
C3302	C-12
C3303	D-15
C3305	E-13
C3306	C-14
C3307	D-13
C3308	D-13
C3309	D-15
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C3311	E-15
C3312	E-13
C3313	E-13
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C3316	E-15
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C3318	E-13
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C3321	E-13
C3322	E-13
C3323	E-14
C3324	E-15
C3325	D-15
C3326	D-15
C3327	E-15
C3328	F-14
C3329	D-10
C3331	C-10
C3332	C-11
C3333	C-11
C3334	C-12
C3335	C-10
C3336	C-10
C3337	C-11
C3338	C-11
C3339	E-14
C3340	E-14
C3341	E-15
C3342	E-15
C3343	E-15
C3345	E-15
C3346	E-13
C3348	E-13
C3352	E-15
C3901	A-17
C3902	A-17
C3903	A-17
C3904	A-17
C3905	A-17
C3906	A-17
C3908	A-17
C3909	A-17
C3910	B-17
C3911	B-17
C3912	B-18
C3913	B-17
C3914	B-18
C3915	A-18
C3916	A-18
C3917	B-18
C3918	B-18
C3919	A-18
C3920	A-18
C3921	B-18
C3922	A-18
C3923	B-18
C3924	A-18
C3925	A-18
C3926	A-18
C3927	A-18
C3928	A-18
C3934	A-17
C3935	B-18
C3936	B-18
C4440	G-13
C4441	G-13
C4442	G-13
C4501	F-11
C4504	E-12
C4505	E-12
C4506	E-12
C4507	E-12
C4508	E-12
C4509	F-11
C4510	E-11
C4801	C-15
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C4804	A-15
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C4808	A-15
C4810	A-15
C4811	A-15
C4812	A-15
C4813	A-14
C4814	A-14
C4815	A-14
C4816	A-14
C4817	A-14
C4819	C-14
C4820	B-13
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C4822	C-13
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C4827	B-13
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C5701	A-16
C5702	A-16
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C5706	A-17
C5707	A-16
C5708	A-16
C5709	B-17
C5710	B-16
C5713	B-17
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C5716	A-16
C5717	B-17
C5718	B-16
C5719	A-17
C5720	B-15
C5721	B-16
C5722	B-17
C5723	B-15
C5724	B-17
C5725	B-16
C5728	B-15
C5730	B-16
C5731	B-15
C5732	B-17
C5733	B-16
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C5746	C-16
C5747	C-16
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C5753	C-17
C5754	C-17
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C5756	C-17
C5757	C-17
C5758	B-15
C5759	B-16
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C5841	B-18
C5842	C-18
C5843	C-18
C5844	C-17
CN1101	E-16
CN1108	E-10
D1101	E-16
D1102	E-16
D1103	E-16
D1105	F-16
D1106	E-16
D1501	G-16
D3301	E-12
D3302	E-12
D3303	E-15
D3304	E-15
D4802	A-14
D4803	C-13
D4804	B-15
D4806	A-14
FB1501	G-15
FB1502	G-15
FB1503	G-15
FB1505	G-15
FB2291	C-16
FB3303	C-12
FB3304	D-10
FB3307	D-15
FB4501	D-11
FB4801	A-14
FB4818	B-13
IC1301	B-11
IC1304	B-13
IC1501	F-15
IC1552	D-17
IC2291	D-16
IC3101	F-14
IC3102	F-15
IC3201	F-13
IC3202	F-12
IC3301	D-14
IC3302	C-12
IC3901	A-18
IC4501	E-11
IC4502	D-12
IC4801	A-13
IC4802	A-15
IC4803	B-14
IC4804	A-14
IC5701	B-16
IC5702	C-17
IC5801	C-18
L1312	A-13
L1313	B-13
L1314	B-13
L1315	A-13
L1316	B-13
L1553	D-17
L2291	D-15
L3102	G-13
L3103	G-14
L3201	F-12
L3303	E-13
L3304	E-15
L3305	E-13
L3306	E-15
L3307	C-10
L3901	B-17
L3902	B-18
L3903	B-18
L3904	B-18
L5701	C-16
L5803	B-18
Q1302	B-12
Q1303	A-12
Q1304	A-11
Q1305	B-12
Q1306	B-12
Q1307	A-12
Q1308	A-12
Q1309	B-12
Q1311	A-12
Q1312	A-12
Q1316	A-11
Q1321	A-11
Q1323	A-11
Q1324	B-12
Q1327	A-12
Q1328	A-11
Q1329	A-12
Q1330	B-12
Q1331	B-13
Q1332	B-12
Q1554	D-16
Q3102	F-14
Q3107	G-14
Q3109	G-14
Q3119	G-14
Q3120	G-14
Q3201	F-13
Q3305	F-14
Q3306	F-14
Q3309	E-15
Q3310	E-14
Q3311	F-15
Q3902	B-18
Q3903	B-18
Q4801	C-15
Q4802	C-15
Q4804	C-14
Q4806	B-15
Q4813	C-15
Q5708	A-16
Q5716	B-15
Q5718	A-16
R1144	D-10
R1149	A-16
R1150	A-16
R1151	E-16
R1152	E-16
R1153	E-16
R1154	E-16
R1155	E-16
R1301	B-10
R1302	B-10
R1303	B-10
R1304	C-11
R1305	C-10
R1306	A-10
R1307	B-10
R1309	C-10
R1310	A-10
R1311	A-10
R1312	C-11
R1313	A-11
R1314	C-11
R1317	A-12
R1318	A-12
R1321	A-12
R1322	A-12
R1323	A-11
R1326	C-11
R1327	A-12
R1330	A-11
R1331	A-11
R1332	A-11
R1333	A-11
R1334	A-11
R1335	C-12
R1336	A-11
R1337	C-12
R1338	A-11
R1339	A-11
R1340	A-11
R1341	B-12
R1342	B-12
R1343	C-12
R1345	A-11
R1346	A-11
R1347	A-12
R1348	A-12
R1349	A-13
R1355	B-12
R1356	B-12
R1357	C-11
R1358	C-11
R1359	C-10
R1360	A-10
R1361	B-13
R1362	C-13
R1363	C-13
R1364	C-12
R1365	C-12
R1366	B-12
R1367	C-13
R1368	C-13
R1501	F-15
R1502	F-15
R1503	F-15
R1504	G-15
R1505	G-15
R1506	G-15
R1508	G-15
R1509	F-15
R1512	G-16
R1523	G-15
R1561	D-16
R1562	D-16
R1563	D-16
R1564	D-16
R1565	D-17
R1566	D-16
R1567	D-16
R1568	D-17
R1570	D-17
R1571	D-17
R1572	D-17
R1573	D-16
R1574	D-16
R1575	D-16
R1576	D-16
R1577	D-16
R1596	D-16
R3103	F-13
R3104	F-13
R3107	G-14
R3108	G-14
R3109	G-14
R3110	G-14
R3111	G-14
R3113	G-14
R3128	G-15
R3139	G-14
R3140	G-14
R3141	G-14
R3142	G-14
R3205	F-13
R3206	F-13
R3210	F-12
R3212	F-13
R3213	F-12
R3214	F-13
R3215	F-13
R3307	D-13
R3309	E-13
R3310	E-12
R3311	E-12
R3312	E-13
R3313	E-13
R3315	E-14
R3316	E-14
R3317	E-15
R3318	E-15
R3319	E-15
R3320	E-13
R3321	E-14
R3322	E-13
R3323	E-15
R3324	E-15
R3325	D-15
R3326	E-15
R3327	E-15
R3328	F-14
R3329	F-15
R3330	D-11
R3331	E-14
R3332	F-15
R3333	D-10
R3334	F-14
R3335	C-10
R3335	F-15
R3336	F-14
R3337	C-11
R3338	F-15
R3339	D-10
R3340	E-14
R3341	F-14
R3343	F-14
R3345	D-10
R3346	C-10
R3347	C-10
R3348	C-10
R3349	C-10
R3350	C-10
R3351	E-15
R3352	C-12
R3353	C-10
R3354	C-10
R3356	E-15
R3357	C-10
R3358	E-15
R3359	C-12
R3360	E-15
R3361	C-11
R3362	C-11
R3363	C-11
R3364	C-11
R3365	C-11
R3366	C-11
R3367	C-11
R3368	C-11
R3369	C-11
R3370	C-11
R3371	C-11
R3372	C-11
R3375	C-13
R3376	C-14
R3385	E-13
R3386	C-14
R3387	F-15
R3388	F-15
R3389	F-14
R3390	F-14
R3391	F-14
R3392	E-15
R3393	F-15
R3394	F-15
R3395	E-15
R3396	E-14
R3397	E-14
R3398	E-14
R3903	B-17
R3904	A-17
R3905	A-17
R3908	B-17
R3909	A-17
R3911	A-18
R3912	B-17
R3913	B-18
R3916	B-18
R3917	A-18
R3918	A-18
R3919	A-18
R3920	A-18
R3921	A-18
R3922	A-18
R3923	B-18
R3924	A-18
R3936	B-18
R3939	B-18
R3940	B-17
R3941	B-17
R3942	A-17
R3943	A-17
R3948	B-18
R3949	B-18
R4408	G-12
R4409	G-12
R4410	G-12
R4428	G-12
R4429	G-12
R4450	G-13
R4451	G-13
R4452	G-13
R4502	E-12
R4503	E-12
R4507	F-12
R4508	E-10
R4511	E-10
R4512	E-12
R4515	E-12
R4520	D-12
R4521	D-11
R4522	D-11
R4523	D-11
R4524	D-11
R4526	D-11
R4527	D-12
R4530	E-12
R4801	C-15
R4802	C-15
R4803	C-14
R4804	A-14
R4805	A-14
R4806	C-15
R4807	C-15
R4808	A-14
R4809	C-15
R4810	C-15
R4811	C-14
R4812	A-15
R4813	A-15
R4814	A-15
R4815	A-15
R4816	A-14
R4817	A-14
R4818	A-15
R4819	A-15
R4820	B-15
R4821	B-15
R4822	B-15
R4823	B-15
R4824	A-15
R4829	B-15
R4830	B-15
R4832	C-15
R4833	A-14
R4834	A-14
R4835	A-14
R4836	A-14
R4840	C-14
R4855	C-15
R4861	A-14
R4862	A-14
R4863	C-14
R4864	C-14
R4867	A-14
R4868	A-14
R4869	A-14
R4872	C-14
R4873	C-14
R4876	C-13
R4878	B-13
R4882	B-13
R4883	B-13
R4884	B-13
R4885	B-13
R4886	B-13
R4887	B-13
R4888	B-13
R4896	B-15
R4897	B-13
R4898	B-13
R4899	B-13
R4902	F-12
R4905	F-12
R4920	D-11
R4921	D-11
R5707	A-16
R5708	A-16
R5709	A-17
R5710	A-17
R5714	A-17
R5715	A-17
R5717	B-15
R5718	B-15
R5719	B-15
R5720	B-17
R5721	B-17
R5724	C-16
R5725	C-16
R5728	C-16
R5730	C-16
R5731	C-17
R5732	C-17
R5733	C-17
R5744	B-15
R5745	B-15
R5746	B-15
R5747	B-15
R5801	C-17
R5802	C-18
R5803	C-18
R5805	C-18
R5806	C-17
R5807	C-18
R5809	C-18
R5814	C-17
R5815	C-18
R5816	C-17
R5817	C-18
R5818	C-17
R5819	C-18
R5820	C-18
R5821	C-17
R5822	C-17
R5823	C-18
R5824	C-18
R5825	C-17
R5826	B-17
R5827	B-18
R5828	C-17
R5829	B-18

VC-254 BOARD (SIDE B)

R5830	B-17
R5831	B-17
R5834	B-18
R5846	B-18
R5847	C-18
RB4502	D-11
RB4801	B-15
RB4803	B-15
RB4804	B-15
RB4812	B-13
RB4814	C-14
RB4817	A-14
X1501	G-16
X3301	D-12
X4801	C-14
X4802	C-13
X4901	F-12

PC-082 BOARD (SIDE A)

C1151	B-6
C1152	C-6
C1153	B-6
C1154	D-5
C1155	D-5
C1156	D-4
C1157	C-3
C1158	C-6
C1159	D-4
C1160	C-6
C1161	C-3
C1162	C-6
C1163	B-4
C1166	A-5
C1170	C-2
C1171	D-2
C1172	B-1
C1173	C-2
C1174	B-1
C1175	C-6
C1176	D-6
C1177	C-3
C1178	B-4
C1179	B-4
C1182	A-5
C1183	B-6
C1184	D-4
C1185	D-4
C1190	C-6
C1194	D-4
C1196	C-1
C1198	C-6
C1199	C-6
C1904	C-1
C1905	B-3
C1906	D-3
C1908	B-3
C1916	D-2
C1968	D-6
C1970	D-6
C1971	D-5
CN1152	B-6
CN1153	C-1
FB1151	C-2
FB1152	C-1
FB1155	D-4
FB1902	B-3
FB1903	C-1
IC1151	B-6
IC1152	D-6
IC1153	C-2
IC1154	B-2
IC1155	B-5
IC1160	D-5
IC1162	D-6
IC1902	D-3
L1151	C-6

Q1153	C-3
Q1156	B-6
Q1157	D-4
Q1158	D-4
Q1901	D-3
Q1902	D-3
Q1903	D-3
R1151	C-6
R1152	B-6
R1153	C-3
R1154	B-6
R1155	C-3
R1156	C-6
R1157	C-3
R1158	D-4
R1158	D-4
R1159	C-3
R1160	C-3
R1162	D-4
R1163	D-5
R1164	D-5
R1165	D-5
R1166	D-5
R1171	D-5
R1172	D-5
R1173	D-5
R1178	B-6
R1179	B-6
R1181	B-6
R1187	C-6
R1188	C-6
R1190	A-2
R1191	D-5
R1192	D-5
R1193	B-6
R1194	B-6
R1195	D-4
R1196	D-4
R1197	D-4
R1198	D-5
R1199	D-5
R1202	D-6
R1204	D-6
R1205	D-6
R1206	D-6
R1208	D-6
R1211	D-4
R1902	D-3
R1903	D-3
R1904	D-4
R1905	B-3
R1906	D-3
R1907	D-3
R1908	D-3
R1915	D-2
VDR111	C-6
VDR112	C-6
X1151	C-6
X1152	D-6

PC-082 BOARD (SIDE B)

C1164	A-7
C1165	A-7
C1167	A-8
C1168	A-8
C1169	C-9
C1180	A-9
C1181	A-9
C1186	B-8
C1187	B-8
C1188	D-12
C1189	B-7
C1191	B-7
C1192	B-7
C1193	B-7
C1195	C-12
C1200	B-7
C1902	D-10
C1903	D-12
C1907	C-10
C1909	B-11
C1910	B-12
C1911	D-12
C1912	C-12
C1914	D-11
C1915	D-11
C1967	B-8
C1969	A-11
C1972	B-12
C1973	B-10
C1974	B-11
CN1901	C-9
D1151	C-12
D1152	C-12
D1901	E-7
D1902	D-12
FB1151	C-8
FB1153	C-9
FB1154	A-7
FB1156	B-7
FB1158	D-12
IC1156	A-7
IC1157	B-7
IC1158	B-7
IC1159	D-9
IC1161	A-11
IC1901	C-11
Q1154	C-12
Q1155	D-12
R1161	C-8
R1167	A-8
R1168	A-8
R1169	D-12
R1170	A-8
R1174	A-7
R1175	B-8
R1176	B-8

R1177	B-8
R1180	C-12
R1182	D-12
R1183	B-7
R1184	B-8
R1185	C-12
R1186	A-8
R1189	A-8
R1200	D-8
R1201	D-8
R1203	D-10
R1207	D-9
R1209	A-11
R1210	B-11
R1911	E-7
R1912	C-9
R1914	D-11
RB1151	C-8
RB1152	C-8
RB1154	A-9
RB1155	A-9
RB1156	B-8

CF-079 BOARD (SIDE A)

BT101	E-2
C101	E-4
C201	F-7
C202	F-7
C205	F-7
C206	F-6
C207	F-7
C208	F-7
C209	F-7
C210	F-6
C211	F-6
C212	F-7
C213	E-7
C214	F-8
C215	E-7
C216	F-8
C217	E-6
C218	E-7
C219	E-7
C220	E-7
C221	E-7
C223	B-4
C224	B-4
C226	B-5
C227	B-3
CN101	E-4
CN102	F-3
CN103	D-1
CN104	A-4
CN105	E-3
CN106	E-1
CN107	E-8
CN201	A-5
CN202	A-5
D101	E-4
D104	E-8
D108	E-8
D202	E-6
FB201	F-6
FB202	F-8

IC201	F-7
IC202	F-6
IC203	B-4
L201	F-6
L202	E-6
Q101	F-1
Q102	F-1
Q201	F-6
R101	F-2
R103	F-1
R105	F-1
R106	F-1
R108	F-1
R112	B-4
R113	D-1
R130	D-1
R131	E-3
R203	F-7
R205	F-7
R206	F-6
R207	F-6
R208	F-8
R209	F-7
R210	F-6
R211	F-7
R212	F-6
R213	F-7
R214	F-6
R215	E-7
R216	E-8
R217	E-7
R218	E-7
R219	E-7
R220	E-8
R221	E-7
R222	E-7
R226	F-6
R227	E-6
R228	E-6
R229	E-6
R230	E-6

CF-079 BOARD (SIDE B)

D102	F-16
D103	E-10
D105	F-16
D106	F-15
D107	B-15
D109	B-13
D110	D-12
D111	G-15
D112	G-16
D113	F-17
D114	C-13
D115	B-11
D116	B-11
D117	B-12
D118	C-11
D119	D-12
D120	D-13
D121	D-11
D122	F-18
Q103	G-15
R102	E-10
R109	E-11
R110	C-12
R111	D-11
R114	E-11
R115	C-12
R116	D-11
R117	E-11
R118	B-11
R119	D-11

R120	G-15
R121	B-11
R122	F-18
R123	G-16
R124	C-11
R125	F-17
R126	C-11
R127	E-18
R128	C-11
R129	B-13
R231	F-12
R232	F-12
S101	D-13
S102	D-11
S103	C-12
S104	C-13
S105	D-12
S106	B-12
S107	D-13
S108	E-12
S109	B-11
S110	D-11
S111	G-15
S112	B-13
S113	G-16
S114	C-11
S115	F-17
S116	B-13
S117	B-14
S118	F-18

CF-080 BOARD (SIDE A)

BT101	E-3
C101	E-4
C201	F-7
C202	F-7
C205	F-8
C206	F-6
C207	F-7
C208	F-7
C209	F-7
C210	F-5
C211	F-6
C212	E-7
C213	E-6
C214	F-8
C215	F-6
C216	E-7
C217	E-6
C218	E-8
C219	E-7
C220	E-7
C221	E-6
C223	A-3
C224	B-3
C226	B-5
C227	B-3
CN101	E-4
CN102	F-3
CN103	D-1
CN104	A-4
CN105	E-2
CN106	E-1
CN107	E-8
CN201	A-5
CN202	A-5
D104	E-8
D108	E-8
D202	E-6
FB201	F-5
FB202	F-7
IC201	F-7
IC202	F-6
IC203	B-3
L201	F-6
L202	F-6
Q101	F-1
Q102	F-1
Q201	F-6
R101	F-3
R103	F-2
R105	F-2
R106	F-2
R108	F-1
R112	B-3
R130	D-1
R203	F-7
R205	F-7
R206	F-6
R207	F-6
R208	F-8
R209	F-7
R210	F-7
R211	F-7
R212	F-6
R213	F-6
R214	E-7
R215	E-6
R216	E-7
R217	E-7
R218	E-7
R219	E-7
R220	E-7
R221	E-7
R222	E-7
R226	F-6
R227	E-6
R228	E-6
R229	E-6
R230	E-6

CF-080 BOARD (SIDE B)

D101	D-15
D102	F-17
D103	E-10
D105	D-16
D106	D-16
D107	B-14
D109	B-12
D110	E-12
D111	G-15
D112	G-15
D113	F-17
D114	C-13
D115	B-11
D116	B-11
D117	B-12
D118	C-10
D119	D-11
D120	D-14
D121	D-11
D122	F-17
Q103	F-16
R102	E-10
R109	E-11
R110	C-11
R111	D-13
R113	D-17
R114	E-11
R115	C-11
R116	D-13
R117	E-11
R118	C-11
R119	D-13
R120	G-15
R121	C-11
R122	D-11
R123	G-15
R124	C-11
R125	G-15
R126	C-11
R127	D-17
R128	F-16
R129	B-13
R131	F-16
R231	F-12
R232	F-12
S101	D-14
S102	D-11
S103	C-12
S104	C-13
S105	D-12
S106	B-12
S107	D-14
S108	D-12
S109	B-11
S110	D-11
S111	G-15
S112	B-13
S113	G-16
S114	C-11
S115	F-17
S116	B-13
S117	B-14
S118	F-18

SI-028/029 BOARD (SIDE A)

C301	B-2
C304	B-3
C305	B-3
C307	A-2
C308	A-3
C309	A-3
C310	A-3
C311	B-3
C312	B-3
D301	B-2
D302	B-2
D303	B-2
D304	B-3
D306	A-2
D307	B-1
D308	B-2
F301	B-3
IC301	B-1
Q301	A-2
R307	B-3
R308	A-3
R309	A-3
R310	A-2
R312	B-3
R313	B-3
R314	A-3
R315	B-3
VDR301	B-2
VDR302	B-2

SI-028/029 BOARD (SIDE B)

C306	B-7
CN301	B-6
CN302	B-6
CN303	B-6
CN304	B-7
D305	B-7
L301	B-6
R301	A-6
R311	B-6
SE301	A-5
SE302	B-5

LB-068/070 BOARD (SIDE A)

C702	B-1
CN701	A-1
CN702	A-1

LB-068/070 BOARD (SIDE B)

D701	A-4
D702	B-4
IC701	A-4
Q701	A-4
Q702	A-4
R701	A-4
R702	A-4
R703	A-4
R704	A-4
R705	B-4
R706	B-4
TH701	A-4

PD-138 BOARD (SIDE A)

C5501	A-6
C5503	A-5
C5504	C-5
C5505	B-5
C5506	B-5
C5507	B-5
C5508	C-5
C5509	A-4
C5510	A-5
C5511	B-4
C5512	B-4
C5513	A-4
C5514	A-4
C5515	B-5
C5516	B-5
C5517	A-4
C5518	A-4
C5519	A-4
C5520	B-5
C5521	A-3
C5522	A-3
C5523	D-4
C5524	B-3
C5527	A-5
C5528	A-5
C5529	C-6
C5530	D-5
C5531	C-6
C5532	A-3
C5602	D-4
C5603	D-4
C5604	D-3
C5605	B-2
C5606	B-2
C5607	D-1
C5704	B-1
CN5501	D-5
CN5502	B-5
CN5604	D-2
CN5701	B-6
CN5703	C-6
CN5704	A-5
CN5705	A-3
D5502	B-5
D5503	A-5
D5601	D-3
D5603	B-1
D5604	B-1
FB5502	B-6
FB5503	A-4
FB5504	A-4
IC5501	B-5
IC5502	C-5
IC5601	B-2
IC5602	B-2
IC5701	A-1
L5501	A-6
L5504	A-4
L5505	C-5
L5601	D-4
Q5501	C-5
Q5502	A-3
Q5509	A-3
Q5510	B-3
Q5511	B-3
Q5601	B-3
Q5602	D-3
Q5603	B-2
R5501	A-5
R5502	A-5
R5503	B-5
R5504	C-6
R5505	A-5
R5506	B-4
R5507	B-4
R5508	B-4
R5509	B-4
R5510	B-4
R5511	B-4
R5512	B-5
R5513	B-5
R5514	B-4
R5515	B-4
R5516	B-5
R5517	D-5
R5518	D-4
R5521	D-5
R5522	B-4
R5523	A-4
R5524	A-4
R5525	A-4
R5551	C-5
R5553	B-5
R5557	A-5
R5559	B-6
R5560	C-6
R5561	A-3
R5562	B-3
R5563	B-3
R5564	B-3
R5565	B-3
R5566	B-3
R5567	B-3
R5568	A-3
R5569	A-5
R5570	A-3
R5571	A-3
R5572	C-6
R5573	D-4
R5574	D-4
R5575	C-5
R5609	A-2
R5610	D-3
R5611	B-2
R5612	B-2
R5613	D-4
R5614	B-2
R5616	B-2
R5617	B-2
R5618	D-3
R5619	B-1
R5620	B-1
R5712	B-2
T5601	D-3

PARTS LOCATION

CF-080, SI-028, SI-029,LB-068, LB-070, PD-138

PD-139 BOARD (SIDE A)

C5501	A-5
C5503	A-5
C5504	C-5
C5505	B-5
C5506	B-5
C5507	B-5
C5508	C-5
C5509	A-4
C5510	A-4
C5511	B-4
C5512	B-4
C5515	B-5
C5516	B-5
C5517	A-4
C5518	A-3
C5519	B-4
C5527	A-5
C5529	C-6
C5532	A-5
C5533	D-4
C5534	C-5
C5536	B-3
C5537	B-3
C5538	B-3
C5539	A-3
C5540	D-6
C5602	D-4
C5603	D-4
C5604	D-3
C5605	B-2
C5606	B-2
C5607	D-1
C5704	B-1
CN5501	D-5
CN5502	B-5
CN5604	D-2
CN5701	B-6
CN5703	C-6
CN5704	A-5
CN5705	A-3
D5502	B-5
D5503	D-5
D5601	D-3
D5603	B-1
D5604	B-1
FB5502	B-6
FB5503	A-4
FB5504	A-4
IC5501	B-5
IC5502	C-5
IC5601	B-2
IC5602	B-2
IC5701	A-1
L5501	A-6
L5504	A-4
L5505	C-5
L5601	D-4
Q5501	C-5
Q5503	B-3
Q5504	A-3
Q5505	A-3
Q5506	B-3
Q5508	B-3
Q5602	D-3
Q5603	B-2
R5501	A-5
R5502	A-6
R5503	A-6
R5504	C-6
R5505	A-5
R5506	B-4
R5507	B-4
R5508	B-4
R5509	B-4
R5510	B-4
R5511	B-4
R5512	B-5
R5523	A-4
R5524	A-4
R5525	A-4
R5551	C-5
R5553	B-5
R5557	A-5
R5558	A-6
R5560	C-6
R5571	B-4
R5572	B-3
R5573	B-3
R5574	A-3
R5575	A-3
R5576	A-3
R5577	B-3
R5579	D-6
R5585	A-4
R5586	A-4
R5587	A-4
R5588	B-4
R5589	B-4
R5590	C-6
R5591	D-4
R5592	D-4
R5609	A-2
R5610	D-3
R5611	B-2
R5612	B-2
R5613	D-4
R5614	B-2
R5616	B-2
R5617	B-2
R5618	D-3
R5619	B-1
R5620	B-1
R5712	B-2
T5601	D-3

FU-150/154 BOARD (SIDE A)

C401	A-2
C402	A-1
C403	A-1
C404	B-1
C405	B-1
C406	B-1
C407	A-1
CN401	A-1
CN402	B-3
D401	B-1
D402	B-1
D408	A-3
F401	A-1
F402	B-1
F403	B-1
F404	B-1
L401	B-1
LF401	A-2
Q401	A-2
Q402	A-4
Q403	A-3
Q404	B-2
R401	B-1
R406	A-1
R407	A-1
R408	A-2
R409	B-2
R410	B-2
R429	A-1
R430	A-1

FU-150/154 BOARD (SIDE B)

C409	A-5
C410	B-5
CN403	B-6
D404	A-4
D405	B-4
D406	A-4
D407	A-4
F405	B-5
F406	B-5
Q405	B-5
Q407	A-5
Q408	A-5
Q409	B-5
Q410	B-5
Q411	B-5
Q412	B-5
R402	A-4
R403	B-4
R420	B-5
R421	B-5
R422	A-5
R423	A-5
R424	B-5
R425	B-5
R426	B-5
R427	B-5
R428	B-5

SECTION 5
ADJUSTMENTS

1. Before starting adjustment

1-1. Adjusting items when replacing main parts and boards.

When replacing main parts, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts																							
		Block replacement							Parts replacement																
		Lens device	LCD block ND901 (Fluorescent tube)	LCD block LCD901 (LCD panel)	Mechanism deck *1	Mechanism deck M901 (Drum assy.) *1	Mechanism deck M902 (Capstan motor)	Mechanism deck LS chassis assy	CD-292/315 board IC501 (CCD imager)	CF-079/080 board IC201 (LCD driver (EVF))	CF-079/080 board IC202 (Timing generator (EVF))	PD-138/139 board IC5501 (RGB driver (LCD))	PD-138/139 board IC5502 (Timing generator (LCD))	PD-138/139 board Q5602, T5601 (Inverter)	SI-028/029 board SE301,302 (PITCH,YAW sensor)	VC-254 board IC1501, X1501 (Timing generator)	VC-254 board IC1502 (S/H, AGC)	VC-254 board IC2201 (Camera, Hi8/Std8 process)	VC-254 board IC3103 (REC/PB AMP)	VC-254 board IC3101 (EQ, A/D conv. PLL)	VC-254 board IC3701 (LINE IN/OUT)	VC-254 board IC3301 (DV signal process)	VC-254 board IC2291 (EVR)	VC-254 board IC3901 (IR transmitter)	VC-254 board IC5701 (AUDIO IN/OUT, AFM)
Initialization of B,C,D,E,F,7,8 page data	Initialization of C, D, 8 page data																								
	Initialization of B page data *2																								
	Initialization of E, F, 7 page data																								
Camera	HALL adj.	●																							
	Flange back adj.	●							●																
	Optical axis adj.	●							●																
	Color reproduction adj.								●								●								
	AWB & LV standard data input								●								●								
	Auto white balance adj.								●								●								
	Angular velocity sensor sens. adj.														●										
EVF	VCO adj.									●	●														
	RGB AMP adj.									●															
	Contrast adj.									●												●			
	COM DC adj. *5									●															
LCD	VCO adj.											●	●												
	RGB AMP adj.											●													
	Black limit adj. *4											●													
	Contrast adj.											●										●			
	Center level adj. *4											●													
	COM-AMP adj. *3, PSIG gray adj. *4											●													
	V-COM adj.			●								●													
	White balance adj.		●	●								●		●											
System control	Serial No. input																								
Servo & RF	REEL FG adj.				●			●																	
	Switching position adj.				●	●																			
	AGC center level adj.																		●	●					
	APC & AEQ adj.																		●	●					
	PLL fo & LPF fo adj.																		●	●					
	Hi8/Std8 switching position adj.				●	●																			
	CAP FG offset adj.				●		●																●		
Video	27MHz origin oscillation adj.															●							●		
	Chroma BPF fo adj.																				●				
	S VIDEO OUT Y level adj.																				●	●			
	S VIDEO OUT chroma level adj.																				●	●			
	Hi8/Std8 Y/C level setting																	●							
	Hi8/Std8 AFC fo adj.																	●					●		
IR	IR video carrier frequency adj.																						●	●	
	IR video deviation adj.																				●		●	●	
	IR audio deviation adj.																						●	●	●
Audio	Hi8/Std8 AFM BPF fo adj.																						●		●
	Hi8/Std8 AFM 1.5MHz deviation adj.																						●		●
	Hi8/Std8 AFM 1.7MHz deviation adj.																						●		●
Mechanism	Tape path adj.				●	●	●	●																	

Table. 5-1-1(1).

When replacing a board or EEPROM, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Board replacement					EEPROM replacement		
		CF-079/080 board (COMPLETE)	SI-028/029 board (COMPLETE)	PC-082 board (COMPLETE) *2	PD-138/139 board (COMPLETE)	VC-254 board (COMPLETE)	PC-082 board IC1154 (FLASH MEMORY) *2	VC-254 board IC4502 (EEPROM)	VC-254 board IC4901 (EEPROM)
Initialization of B,C,D,E,F,7,8 page data	Initialization of C, D, 8 page data					●		●	
	Initialization of B page data *2			●			●		
	Initialization of E, F, 7 page data					●			●
Camera	HALL adj.					●			●
	Flange back adj.					●			●
	Optical axis adj.					●			●
	Color reproduction adj.					●			●
	AWB & LV standard data input					●			●
	Auto white balance adj.					●			●
	Angular velocity sensor sens. adj.		●			●			●
EVF	VCO adj.	●				●		●	
	RGB AMP adj.	●				●		●	
	Contrast adj.	●				●		●	
	COM DC adj. *5	●				●		●	
LCD	VCO adj.				●	●		●	
	RGB AMP adj.				●	●		●	
	Black limit adj. *4				●	●		●	
	Contrast adj.				●	●		●	
	Center level adj. *4				●	●		●	
	COM-AMP adj. *3, PSIG gray adj. *4				●	●		●	
	V-COM adj.				●	●		●	
	White balance adj.				●	●		●	
System control	Serial No. input					●		●	
Servo & RF	REEL FG adj.					●		●	
	Switching position adj.					●		●	
	AGC center level adj.					●		●	
	APC & AEQ adj.					●		●	
	PLL fo & LPF fo adj.					●		●	
	Hi8/Std8 switching position adj.					●			●
	CAP FG offset adj.					●			●
Video	27MHz origin oscillation adj.					●			●
	Chroma BPF fo adj.					●		●	
	S VIDEO OUT Y level adj.					●		●	
	S VIDEO OUT chroma level adj.					●		●	
	Hi8/Std8 Y/C level setting					●			●
	Hi8/Std8 AFC fo adj.					●			●
IR	IR video carrier frequency adj.					●			●
	IR video deviation adj.					●			●
	IR audio deviation adj.					●			●
Audio	Hi8/Std8 AFM BPF fo adj.					●			●
	Hi8/Std8 AFM 1.5MHz deviation adj.					●			●
	Hi8/Std8 AFM 1.7MHz deviation adj.					●			●
Mechanism	Tape path adj.								

Table. 5-1-1(2).

*1: When replacing the drum assy or mechanism deck, reset the data of page: 2, address: A2 to A4 to “00”. (Refer to “Record of Use check” of “5-4. SERVICE MODE”)
*2: DCR-TRV330/TRV530
*3: DCR-TRV230/TRV330
*4: DCR-TRV530
*5: CF-079 board (Part No. suffix: 12 or later)
CF-080 board (Part No. suffix: 13 or later)

Note: CD-292 board: DCR-TRV230/TRV330
CD-315 board: DCR-TRV530
CF-079 board: DCR-TRV230/TRV330
CF-080 board: DCR-TRV530
PD-138 board: DCR-TRV230/TRV330
PD-139 board: DCR-TRV530
SI-028 board: DCR-TRV230/TRV330
SI-029 board: DCR-TRV530

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Regulated power supply
- Color monitor
- Digital voltmeter
- Vectorscope

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.4	J-6080-806-A	White balance check
	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded) (Note1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	Multi CPC jig	J-6082-311-A	For adjusting the LCD block
J-9	CPC-13 jig	J-6082-443-A	For adjusting the video section For adjusting the color viewfinder
J-10	Power code (Note2)	J-6082-223-A	For connecting the battery terminal and DC power supply
J-11	Extension cable (100P 0.5mm)	J-6082-352-A	For extension between the PC-082 board (CN1901) and the VC-254 board (CN1104)
J-12	IR receiver jig	J-6082-383-A	For adjusting the IR transmitter
J-13	Minipattern box	J-6082-353-B	For adjusting the flange back
J-14	Camera base	J-6082-384-A	For adjusting the flange back

Note1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note2: Connect the adjustment remote commander to the LANC jack, and set to HOLD switch to the “ADJ” side.

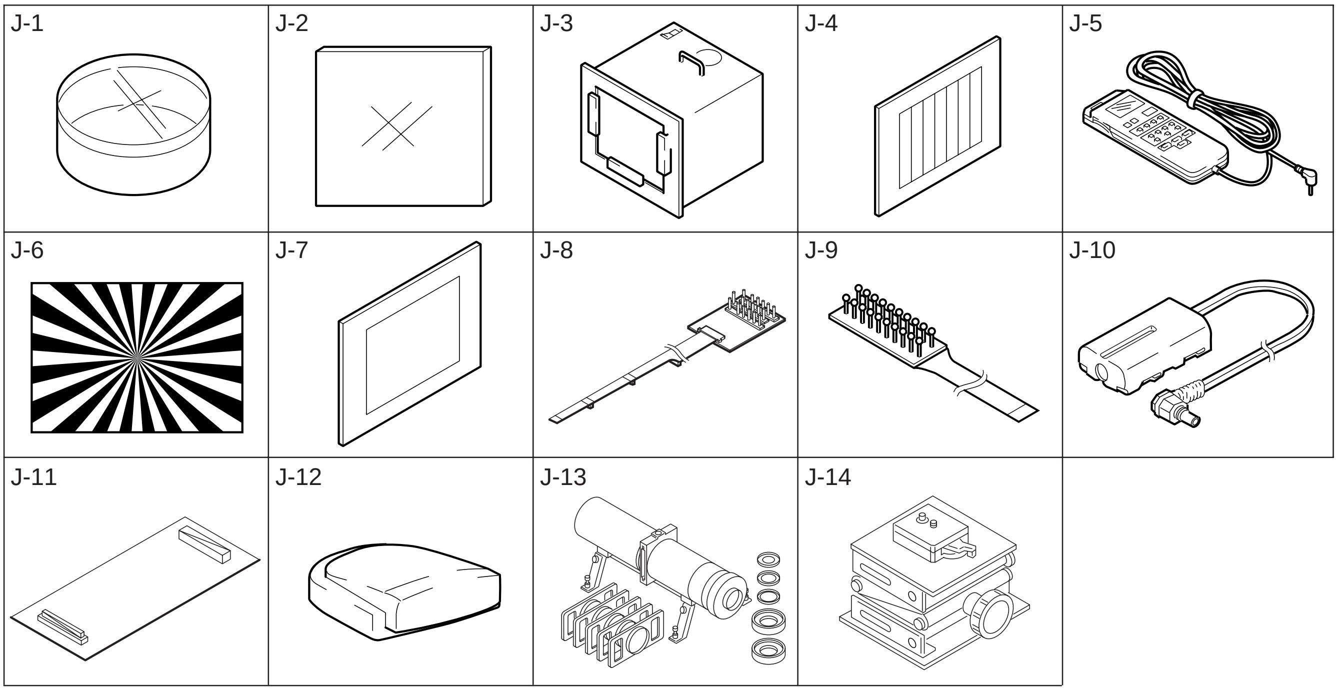


Fig. 5-1-1.

1-1-2. Preparations

Note1: For details of how remove the cabinet and boards, refer to “2. DISASSEMBLY”.

Note2: When performing only the adjustments, the lens block and boards need not be disassembled.

1) Connect the equipment for adjustments according to Fig. 5-1-3.
2) The front panel block (SI-028/029 board, focus ring, microphone unit) must be assembled because the focus ring is used for adjustments.

Note3: As removing the cabinet (R) (removing the VC-254 board CN1117) means removing the lithium 3V power supply (CF-079/080 board BT101), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data (data of page: 2, address: B0 to C6) and data on history use (data of page: 2, address: A2 to AA). (Refer to “5-4. Service Mode” for the self-diagnosis data and data on the history use.)

Note4: Setting the “Forced Camera Power ON” Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button.

The above procedure will enable the camera power to be turned on with the SS-1380 block removed. After completing adjustments, be sure to exit the “Forced Camera Power ON Mode”.

Note5: Exiting the “Forced Camera Power ON” Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

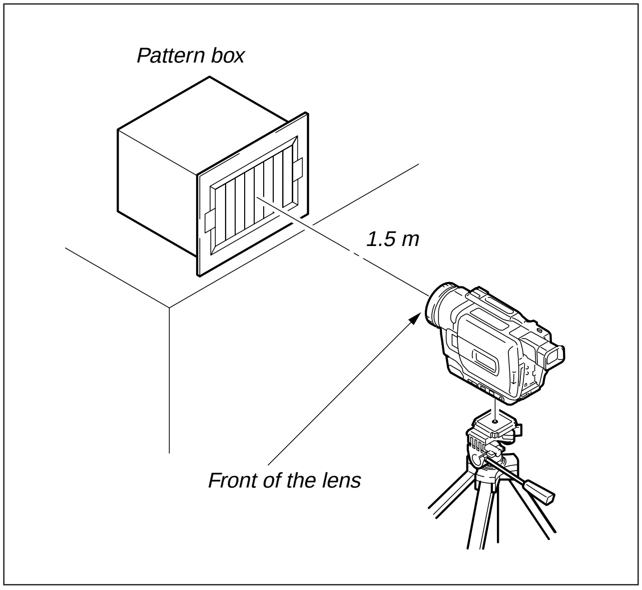


Fig. 5-1-2.

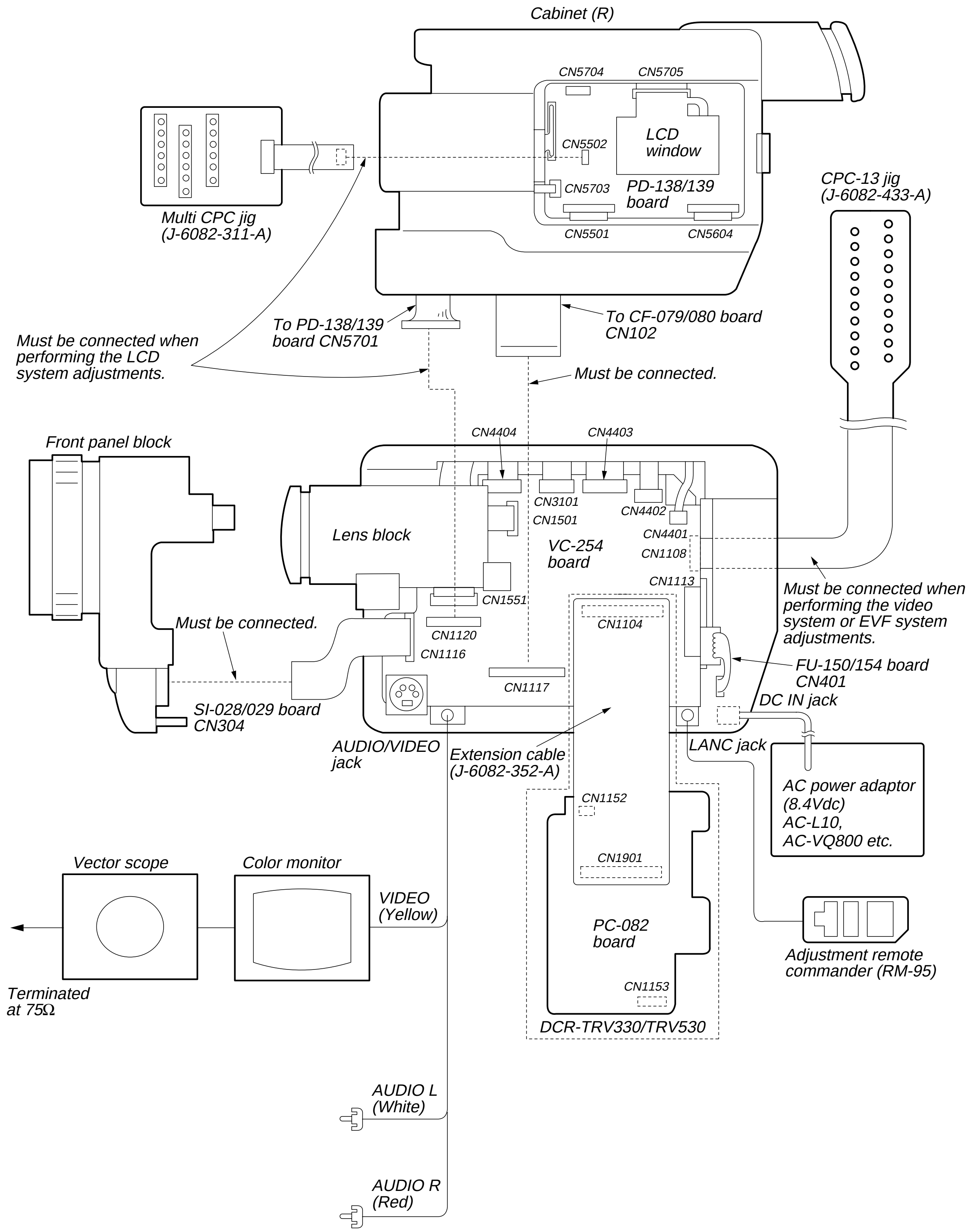

Cabinet (R)
CN5704
CN5705
LCD window
CN5502
CN5703
PD-138/139 board
CN5501
CN5604
Multi CPC jig (J-6082-311-A)
CPC-13 jig (J-6082-433-A)
To PD-138/139 board CN5701
To CF-079/080 board CN102
Must be connected when performing the LCD system adjustments.
Must be connected.
Front panel block
CN4404
CN4403
CN3101
CN1501
CN4402
CN4401
CN1108
CN1113
Lens block
VC-254 board
CN1551
CN1120
CN1116
CN1117
CN1104
Must be connected.
Must be connected when performing the video system or EVF system adjustments.
FU-150/154 board CN401
DC IN jack
SI-028/029 board CN304
AUDIO/VIDEO jack
Extension cable (J-6082-352-A)
LANC jack
AC power adaptor (8.4Vdc) AC-L10, AC-VQ800 etc.
CN1152
CN1901
PC-082 board
CN1153
DCR-TRV330/TRV530
Adjustment remote commander (RM-95)
Vector scope
Color monitor
VIDEO (Yellow)
Terminated at 75Ω
AUDIO L (White)
AUDIO R (Red)

Fig. 5-1-3.

1-1-3. Precaution

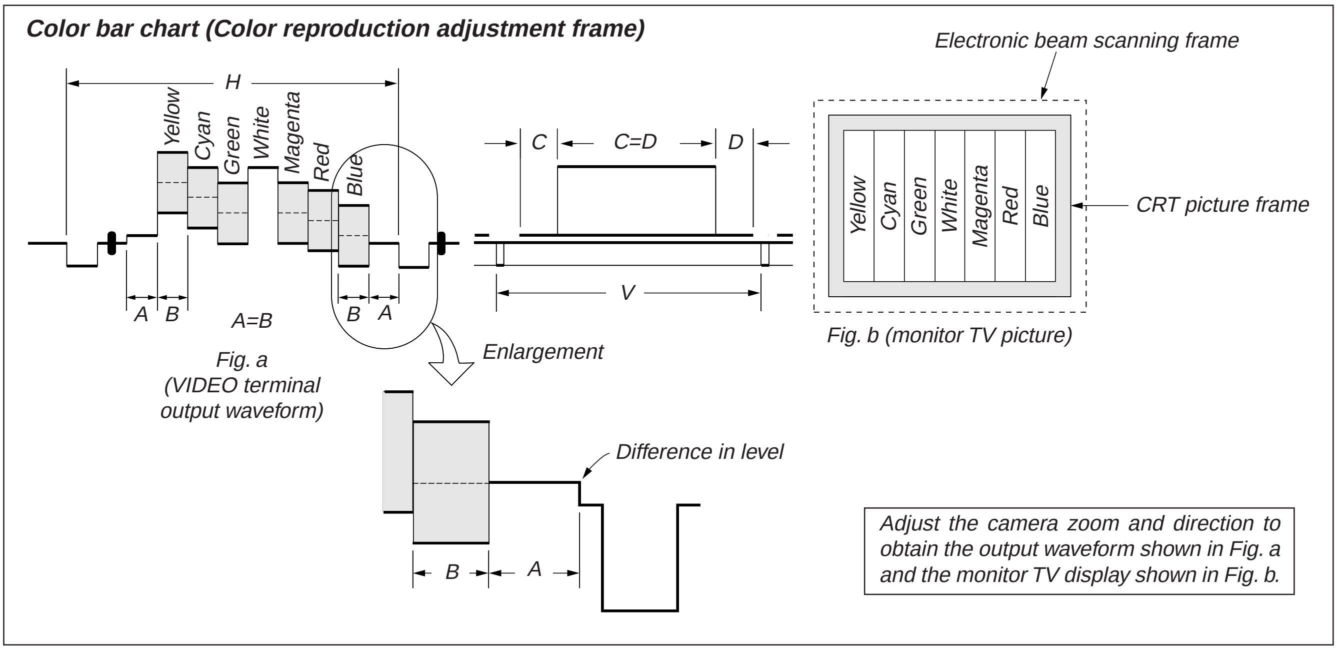
1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1.	POWER switch (SS-1380 block)	CAMERA
2.	NIGHT SHOT switch (Lens block)	OFF
3.	DEMO MODE (Menu display)	OFF
4.	DIGITAL ZOOM (Menu display)	OFF
5.	STEADY SHOT (Menu display)	OFF
6.	DISPLAY (Menu display)	V-OUT/LCD
7.	DISPLAY (CF-079/080 board)	ON
8.	FOCUS switch (FP-282 flexible)	MANUAL
9.	BACK LIGHT (CF-079/080 board)	OFF
10.	PROGRAM AE (Menu display)	OFF
11.	PICTURE EFFECT (Menu display)	OFF
12.	DIGITAL EFFECT (Menu display)	OFF
13.	AUTO SHUTTER (Menu display)	OFF
14.	16 : 9 WIDE (MENU display)	OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.


Color bar chart (Color reproduction adjustment frame)
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
A=B
B
A
Fig. a
(VIDEO terminal
output waveform)
C
C=D
D
V
Enlargement
Difference in level
B
A
Electronic beam scanning frame
Yellow
Cyan
Green
White
Magenta
Red
Blue
CRT picture frame
Fig. b (monitor TV picture)

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the monitor TV display shown in Fig. b.

Fig.5-1-4.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4. (Color reproduction adjustment frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-5 using A0 size (1189mm × 841mm) black and white vellum paper.

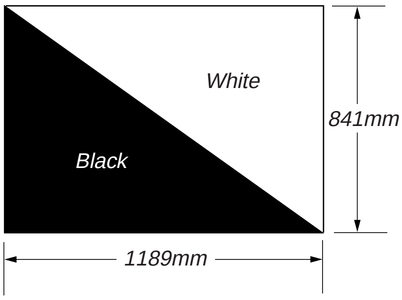

White
Black
841mm
1189mm

Fig. 5-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF B, C, D, E, F, 7, 8 PAGE DATA

1-2-1. INITIALIZATION OF C, D, 8 PAGE DATA

1. Initializing the C, D, 8 Page Data

Note1: If “Initializing the C, D, 8 Page Data” is performed, all data of the C page, D page and 8 page will be initialized. (It is impossible to initialize a single page.)

Note2: If the C, D, 8 page data has been initialized, the following adjustments need to be performed again.
1) Modification of C, D, 8 page data
2) Serial No. input
3) Viewfinder system adjustments
4) LCD system adjustments
5) Servo and RF system adjustments
6) Video system adjustments

Adjusting page	C
Adjusting Address	10 to FF
Adjusting page	D
Adjusting Address	10 to FF
Adjusting page	8
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data
2	3	81	10	Set the data
3	3	80	0A	Set the data, and press the PAUSE button.
4	3	80		Check that the data changes to “1A”
5				Perform “Modification of C, D, 8 Page Data”.

2. Modification of C, D, 8 Page Data

If the C, D, 8 page data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of C, D, 8 Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data
2	2	01	29	Set the data, and press the PAUSE button.

Note: If the following symptoms occur after completing of the “Modification of C, D, 8 page data”, check that the data of the “Fixed data-2” addresses of D page are same as those of the same model of the same destination.
1) The battery end mark on the LCD screen is flashing.
2) The power is shut off so that unit cannot operate.

3. C Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the C, D, 8 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of C, D, 8 Page Data”.)

Address	Initial value	Remark
00 to 0F		
10	EE	Switching position adj.
11	00	
12	00	
13	00	
14 to 16		Fixed data-1
17	E0	REEL FG adj.
18	25	AEQ adj.
19	25	
1A		Fixed data-1
1B	25	AEQ adj.
1C	25	
1D		Fixed data-1
1E	25	AGC center level adj.
1F	3E	PLL fo adj.
20	3E	
21	CA	APC adj.
22	99	LPF fo adj.
23 to 24		Fixed data-1
25	88	S VIDEO out Y level adj.
26	E3	S VIDEO out Cr level adj.
27	A1	S VIDEO out Cb level adj.
28	04	Chroma BPF fo adj.
29	20	PLL fo fine adj.
2A to 2B		Fixed data-1
2C	03	APC adj.
2D to 2F		Fixed data-1
30	E0	REEL FG adj.
31 to 42		Fixed data-1
43		Fixed data-2
44 to 48		Fixed data-1
49		Fixed data-2
4A to 9A		Fixed data-1
9B		Fixed data-2
9C		Fixed data-1
9D		Fixed data-2
9E		
9F to A4		Fixed data-1

C page

Address	Initial value	Remark
A5		Fixed data-2
A6		Fixed data-1
A7		Fixed data-2
A8		
A9 to AE		Fixed data-1
AF		Fixed data-2
B0		
B1 to B6		Fixed data-1
B7		Fixed data-2
B8 to D5		Fixed data-1
D6		Fixed data-2 (Modified data. Copy the data built in the same model.)
D7		
D8		
D9		
DA		
DB		
DC		
DD		
DE		
DF		
E0 to E5		Fixed data-1
E6		Fixed data-2
E7		Fixed data-1
E8	08	Serial No. input
E9	00	
EA	46	
EB	01	
EC	02	
ED	00	
EE	00	
EF	00	
F0 to F3		Fixed data-1
F4	00	Emergency memory address
F5	00	
F6	00	
F7	00	
F8	00	
F9	00	
FA	00	
FB	00	
FC	00	
FD	00	
FE	00	
FF	00	

Table. 5-1-2.

4. D Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the C, D, 8 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of C, D, 8 Page Data”.)

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11 to 12		Fixed data-1
13		Fixed data-2
14 to 1D		Fixed data-1
1E		Fixed data-2
1F		
20 to 26		Fixed data-1
27		Fixed data-2 (Modified data. Copy the data built in the same model.)
28		
29		
2A to 2C		Fixed data-1
2D		Fixed data-2
2E to 2F		Fixed data-1
30		Fixed data-2
31		
32		Fixed data-1
33		Fixed data-2
34 to 47		Fixed data-1
48		Fixed data-2
49		
4A to 4D		Fixed data-1
4E		Fixed data-2
4F		Fixed data-1
50		Fixed data-2 (Modified data. Copy the data built in the same model.)
51		
52		
53		
54		
55 to 57		Fixed data-1
58		Fixed data-2 (Modified data. Copy the data built in the same model.)
59		
5A		
5B		
5C		
5D to 64		Fixed data-1
65		Fixed data-2 (Modified data. Copy the data built in the same model.)
66		
67		
68		
69 to 6A		Fixed data-1
6B		Fixed data-2
6C to 8F		Fixed data-1
90		Fixed data-2
91		
92	87	VCO adj. (EVF)
93	6F	
94	27	Fixed data (*1) COM DC adj. (*2)
95	97	RGB AMP adj.(EVF)
96 to 98		Fixed data-1

D page

Address	Initial value	Remark
99	37	Contrast adj. (EVF)
9A to 9F		Fixed data-1
A0		Fixed data-2
A1		
A2	80	VCO adj. (LCD)
A3	70	
A4	80/26	V-COM adj. (LCD)
A5	2B/B3	RGB AMP adj.(LCD)
A6	00/09	Fixed data (TRV230,TRV330) Black limit adj. (LCD) (TRV530)
A7	B5/41	COM AMP adj. (LCD) (TRV230,TRV330) PSIG gray adj. (LCD) (TRV530)
A8	80	White balance adj. (LCD)
A9	80	
AA	3E/1A	Contrast adj. (LCD)
AB	00/4A	Fixed data (TRV230,TRV330) Center levei adj. (LCD) (TRV530)
AC		Fixed data-2
AD		
AE		Fixed data-1
AF		Fixed data-2
B0 to FF		Fixed data-1

Note: XX / YY
XX : DCR-TRV230/TRV330
YY : DCR-TRV530

*1 : CF-079 board (Part No. suffix: 11)
CF-080 board (Part No. suffix: 11 or 12)
*2 : CF-079 board (Part No. suffix: 12 or later)
CF-080 board (Part No. suffix: 13 or later)

Table. 5-1-3.

5. 8 Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the C, D, 8 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of C, D, 8 Page Data”.)

Address	Remark
00 to 3F	Fixed data-1
40	Fixed data-2
41 to 78	Fixed data-1
79	Fixed data-2
7A to FF	Fixed data-1

Table. 5-1-4.

1-2-2. INITIALIZATION OF B PAGE DATA (DCR-TRV330/ TRV530)

Note: When reading the B page data, insert a "Memory Stick" into the "Memory Stick" slot.

Switch setting:

POWER .... MEMORY

1. Initializing the B Page Data

Note: If the B page data has been initialized, the following adjustments need to be performed again.
1) Modification of B page data

Adjusting page	B
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	8F	03	Set the data, and press PAUSE button.
3	2	8F	00	Set the data, and press PAUSE button.
4	5	0E	00	Set the data, and press PAUSE button.
5	5	01	F3	Set the data, and press PAUSE button.
6	5	00	01	Set the data, and press PAUSE button.
7	5	0E		Check that the data changes to "01".
8				Perform "Modification of B Page Data".

2. Modification of B Page Data

If the B page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Preparations:

Order	Page	Address	Data	Procedure
1	2	8F	03	Set the data, and press PAUSE button.
2	2	8F	00	Set the data, and press PAUSE button.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) **When changing the data, don't press the PAUSE button.**

Processing after Completing Modification of B Page data:

Order	Page	Address	Data	Procedure
1	5	0E	00	Set the data, and press PAUSE button.
2	5	01	FB	Set the data, and press PAUSE button.
3	5	00	01	Set the data, and press PAUSE button.
4	5	0E		Check that the data changes to "01". (The change data are written in the flash memory.)
5	2	00	29	Set the data.
6	2	01	29	Set the data, and press PAUSE button.

3. B Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B Page Data".)

Address	Remark
00 to FF	Fixed data-1 (Initialized data)

Table. 5-1-5.

1-2-3. INITIALIZATION OF E, F, 7 PAGE DATA

1. Initializing the E, F, 7 Page Data

Note1: If “Initializing the E, F, 7 Page Data” is performed, all data of the E page, F page and 7 page will be initialized. (It is impossible to initialize a single page.)

Note2: If the E, F, 7 page data has been initialized, following adjustments need to be performed again.
1) Modification of E, F, 7 page data
2) Camera system adjustments
3) Servo and RF system adjustments
4) Video system adjustments
5) IR transmitter adjustments
6) Audio system adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	7
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	00	55	Set the data.
3	6	01	55	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to “01”.
5				Perform “Modification of E, F, 7 Page Data”.

2. Modification of E, F, 7 Page Data

If the E, F, 7 page data has been initialized, change the data of the “Fixed data-2” address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of E, F, 7 Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data
2	2	01	29	Set the data, and press the PAUSE button.

3. F Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 7 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 7 Page Data”.)

Address	Initial value	Remark
00 to 0F		
10	00	Emergency memory address
11	00	
12	00	
13	00	
14	00	
15	00	
16	00	
17	00	
18	00	
19	00	
1A	00	
1B	00	
1C		Fixed data-2
1D to 22		Fixed data-1
23		Fixed data-2 (Modified data. Copy the data built in the same model.)
24		
25		
26		
27 to 2D		Fixed data-1
2E		Fixed data-2
2F to 32		Fixed data-1
33		Fixed data-2
34 to 37		Fixed data-1
38	4A	HALL adj.
39	70	
3A	8A	
3B		Fixed data-2
3C	80	Auto white balance & LV standard data Input
3D	7A	
3E	2B	
3F	80	
40	65	
41	80	
42	8D	Auto white balance adj.
43	87	
44 to 46		Fixed data-1
47	33	Color reproduction adj.
48		Fixed data-1
49	34	Color reproduction adj.
4A to 4C		Fixed data-1
4D	8C	27MHz origin osc. adj.
4E	2A	Flange back Adj.
4F	18	
50	37	
51	0D	
52	13	
53	08	
54	6E	
55	00	
56	19	

F page

Address	Initial value	Remark
57	00	Flange back Adj.
58	19	
59	00	
5A	00	
5B	04	
5C	00	
5D	00	
5E	6D	Angular velocity sensor sensitivity adj.
5F	67	
60	00	Optical axis adj.
61	00	Flange back Adj.
62	0A	Hi8/Std8 switching position adj.
63	00	
64	83	CAP FG offset adj.
65	50	Hi8/Std8 AFC fo adj.
66		Fixed data-1
67	69	Hi8/Std8 Y output level setting
68	64	Hi8/Std8 chroma output level setting
69 to 7A		Fixed data-1
7B	A6	Hi8/Std8 1.5MHz deviation adj.
7C	94	Hi8/Std8 1.7MHz deviation adj.
7D	80	Hi8/Std8 AFM BPF adj.
7E	41	IR video deviation adj.
7F	33	IR audio deviation adj.
80	C7	IR video carrier freq. adj.
81 to 8D		Fixed data-1
8E		Fixed data-2
8F		
90 to 98		Fixed data-1
99		Fixed data-2
9A to 9F		Fixed data-1
A0		Fixed data-2
A1 to AB		Fixed data-1
AC		Fixed data-2 (Modified data. Copy the data built in the same model.)
AD		
AE		
AF		
B0		
B1		
B2		
B3 to CC		Fixed data-1
CD		Fixed data-2
CE to D6		Fixed data-1
D7	FD	Color reproduction adj.
D8	F4	
D9 to DC		Fixed data-1
DD		Fixed data-2 (Modified data. Copy the data built in the same model.)
DE		
DF		
E0 to EA		Fixed data-1
EB		Fixed data-2
EC		
ED to F2		Fixed data-1
F3		Fixed data-2
F4 to F5		Fixed data-1
F6		Fixed data-2

Address	Initial value	Remark
F7 to FF		Fixed data-1

Table. 5-1-6.

4. E Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 7 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 7 Page Data”.)

Address	Remark
00 to 04	Fixed data-1
05	Fixed data-2
06	
07 to 0E	Fixed data-1
0F	Fixed data-2 (Modified data. Copy the data built in the same model.)
10	
11	
12	
13	
14 to 17	Fixed data-1
18	Fixed data-2
19 to 1B	Fixed data-1
1C	Fixed data-2
1D	
1E to 2F	Fixed data-1
30	Fixed data-2
31 to 33	Fixed data-1
34	Fixed data-2
35	Fixed data-1
36	Fixed data-2
37	Fixed data-1
38	Fixed data-2
39	
3A to 42	Fixed data-1
43	Fixed data-2
44	Fixed data-1
45	Fixed data-2
46 to 50	Fixed data-1
51	Fixed data-2
52	Fixed data-1
53	Fixed data-2
54	Fixed data-1
55	Fixed data-2
56 to 58	Fixed data-1
59	Fixed data-2
5A to 5C	Fixed data-1
5D	Fixed data-2 (Modified data. Copy the data built in the same model.)
5E	
5F	
60 to 6B	Fixed data-1
6C	Fixed data-2
6D to 71	Fixed data-1
72	Fixed data-2
73 to 7D	Fixed data-1
7E	Fixed data-2
7F to 8B	Fixed data-1
8C	Fixed data-2 (Modified data. Copy the data built in the same model.)
8D	
8E	
8F to FF	Fixed data-1

Table. 5-1-7.

5. 7 Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 7 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 7 Page Data”.)

Address	Remark
00 to A7	Fixed data-1
A8	Fixed data-2 (Modified data. Copy the data built in the same model.)
A9	
AA	
AB	
AC to AE	Fixed data-1
AF	Fixed data-2
B0 to CF	Fixed data-1
D0	Fixed data-2
D1	
D2 to FF	Fixed data-1

Table. 5-1-8.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.

1. HALL Adjustment

For detecting the position of the lens iris, adjust AMP gain and offset.

Subject	Not required
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	38, 39, 3A
Specified Value 1	86 to 8A
Specified Value 2	14 to 18

Note1: Displayed data of page 1 of the adjustment remote commander.

1 : 00 : XX
└─── IRIS display data

Switch setting:

POWER .... CAMERA

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	88	Set the data.
3	6	95	16	Set the data.
4	6	01	6D	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note2)
6	6	01	00	Set the data, and press PAUSE button.

Note2: The adjustment data will be automatically input to page: F, address: 38, 39, 3A.

Checking method:

Order	Page	Address	Data	Procedure
1	0	03	03	Set the data.
2	6	01	01	Set the data, and press PAUSE button.
3	1			Check that the IRIS display data (Note1) satisfies the specified value 1.
4	6	01	03	Set the data, and press PAUSE button.
5	1			Check that the IRIS display data (Note1) satisfies the specified value.2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	94	00	Set the data.
2	6	95	00	Set the data.
3	6	01	00	Set the data, and press PAUSE button.
4	0	03	00	Set the data.
5	0	01	00	Set the data.

2. Flange Back Adjustment (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Siemens star chart with ND filter for the minipattern box (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	4E to 5D, 61

Note1: Dark Siemens star chart.
Note2: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:
1) POWER .... CAMERA
2) NIGHT SHOT .... OFF

Preparations:
1) The minipattern box is installed as shown in the following figure.
   Note: The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm.
3) Make the height of the minipattern box and the camcorder equal.
4) Check that the output voltage of the regulated power supply is the specified voltage.
5) Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

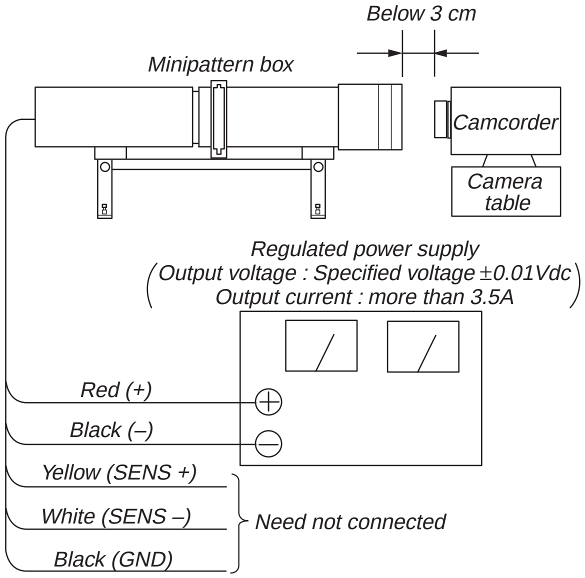

Below 3 cm
Minipattern box
Camcorder
Camera table
Regulated power supply
(Output voltage : Specified voltage ±0.01Vdc
Output current : more than 3.5A)
Red (+)
Black (–)
Yellow (SENS +)
White (SENS –)
Black (GND)
Need not connected

Fig. 5-1-6.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	82	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4	6	01	27	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note3)

Note3: The adjustment data will be automatically input to page: F, address: 4E to 5D, 61.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	82	00	Set the data.
2	0	01	00	Set the data.
3				Turn off the power and turn on again.
4				Perform "Flange Back Check".

3. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

3-1. Flange Back Adjustment (1)

Subject	Flange back adjustment chart (2.0 m from the front of the protection glass)(Luminance: 350 ± 50 lux)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	4E to 5D, 61

Note1: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	82	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4	6	01	15	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to “01”. (Note2)

Note2: The adjustment data will be automatically input to page: F, address: 4E to 5D, 61.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1				Turn off the power and turn on again.
2				Perform “Flange Back Adjustment (2)”

3-2. Flange Back Adjustment (2)

Perform this adjustment after performing “Flange Back Adjustment (1)”.

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	4E to 5D, 61

Note1: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF

Preparations:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500m away should not be in the screen.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	82	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4				Place a ND filter on the lens so that the optimum image is obtain.
5	6	01	29	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to “01”.(Note2)

Note2: The adjustment data will be automatically input to page: F, address: 4E to 5D, 61.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	82	00	Set the data.
2	0	01	00	Set the data.
3				Turn off the power and turn on again.
4				Perform “Flange Back Check”.

4. Flange Back Check

Subject	Siemens star (2.0m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF

Note: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.

1) Select page: 0, address: 03, and set data: 0F.
2) Page 1 shows the state of the focus.

1 : 00 : XX
Odd: Focused
Even: Unfocused

Checking method:

1) Select page: 6, address: 40, and set data: 02.
2) Select page: 6, address: 41, and set data: 01.
3) Place the Siemens star 2.0m from the front of the lens.
4) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
5) Shoot the Siemens star with the zoom TELE end.
6) Turn on the auto focus.
7) Check that the lens is focused (Note).
8) Select page: 6, address: 21, and set data: 10.
9) Shoot the Siemens star with the zoom WIDE end.
10) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 21, and set data: 00.
2) Select page: 6, address: 40, and set data: 00.
3) Select page: 6, address: 41, and set data: 00.
4) Select page: 0, address: 03, and set data: 00.

5. Optical Axis Adjustment

Align the lens Optical Axis with that of the CCD imager. If deviated, center of picture can lose focus when zoom is operated from the WIDE end to the TELE end.

Subject	Siemens star
Measurement Point	Check on the monitor TV
Measuring Instrument	
Adjustment Page	F
Adjustment Address	60

Note: This adjustment should be carried out upon completion of “Flange back adjustment”.

Switch setting:

1) POWER .... CAMERA
2) DIGITAL ZOOM (Menu display) .... OFF
3) STEADY SHOT (Menu display) .... OFF

Preparations before adjustments:

1) Playback the monoscope segment of the system check tape (WR5-5ND).
2) Attach the optical axis frame chart (transparent) on the monitor TV screen. Center of monoscope image and that that of optical axis frame must be agree.
3) Set to the camera mode.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 60, set data: 00, and press the PAUSE button.
3) Place the Siemens star 2.0 m away from the front of the lens.
4) Shoot the Siemens star with the zoom TELE end.
5) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
6) Shoot the Siemens star with the zoom WIDE end.
7) Measure on the monitor TV screen in which area of the optical axis frame the center of the Siemens star is located. Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L1.
8) Read the correction data corresponding to the area from Table 5-1-9.
9) Input the correction data to page: F, address: 60, and press the PAUSE button
10) Shoot the Siemens star with the zoom TELE end.
11) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
12) Shoot the Siemens star with the zoom WIDE end.
13) Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L2.
14) Compare the values L1 and L2, and confirm that L2 is smaller than L1. If L2 is lager than L1, select page: F, address: 60, set data: 00, and press the PAUSE button.

Area	Display phase	Correction data (Page: F, address: 60)
1	22.6° to 67.5°	01
2	67.6° to 112.5°	02
3	112.6° to 157.5°	03
4	157.6° to 202.5°	04
5	202.6° to 247.5°	05
6	247.6° to 292.5°	06
7	292.6° to 337.5°	07
8	337.6° to 22.5°	08

Table 5-1-9.

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.

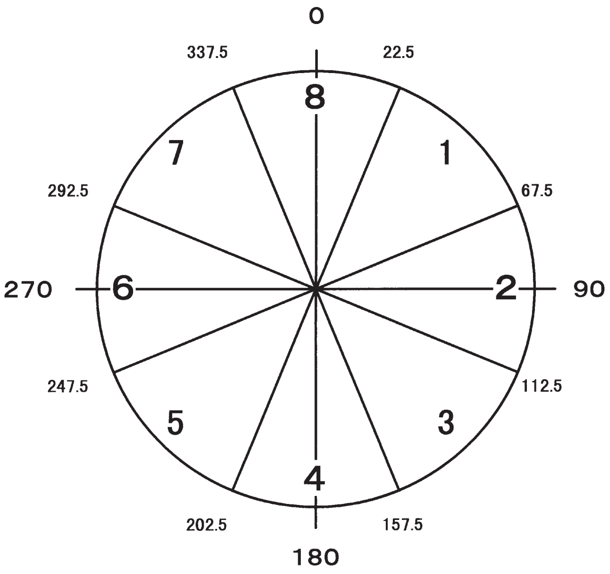


Fig. 5-1-7.

6. Picture Frame Setting

Subject	Color bar chart (Color reproduction adjustment frame) (1.5m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Setting method:

1) Select page: 6, address: 82, and set data: 01.
2) Adjust the zoom and the camera direction, and set to the specified position.
3) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.

Processing after Completing Camera System Adjustments:

After completing the camera system adjustments, release the data settings.

1) Select page: 6, address: 82, and set data: 00.

Check on the oscilloscope

1. Horizontal period

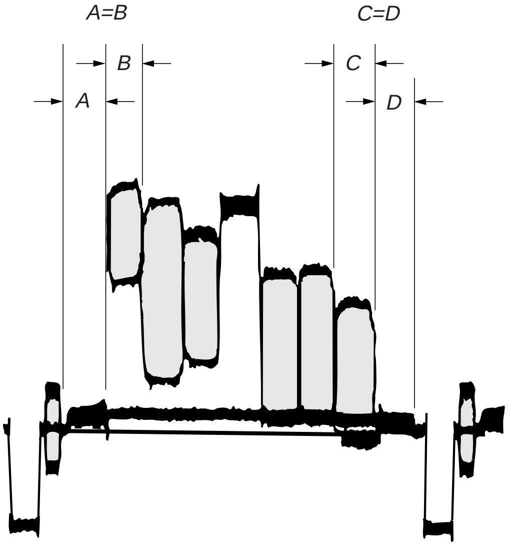


Fig. 5-1-8.

2. Vertical period

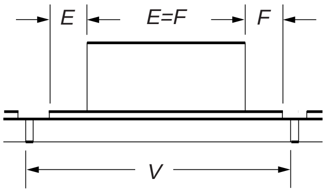


Fig. 5-1-9.

Check on the monitor TV (Underscanned mode)

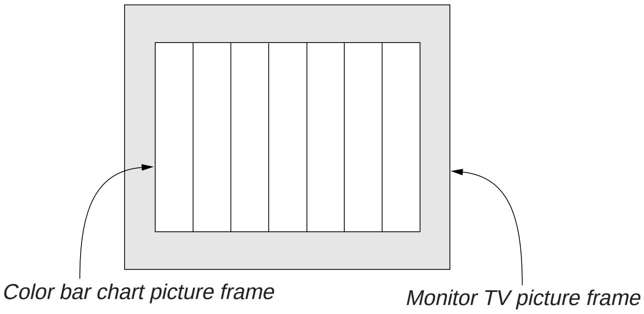


Fig. 5-1-10.

7. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	47, 49, D7, D8
Specified Value	All color luminance points should settle within each color reproduction frame.

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 82, and set data: 01.
3) Select page: F, address: 8B, and write down the data.
4) Select page: F, address: 8B, set data: 2E, and press the PAUSE button.
5) Select page: F, address: 2B, set data: 17, and press the PAUSE button.
6) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
7) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
8) Change the data of page: F, address: 47, 49, D7 and D8, settle each color luminance point in each color reproduction frame.

   Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.

Processing after Completing Adjustments:

1) Select page: F, address: 8B, set the data written down at step 3), and press the PAUSE button.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 6, address: 82, and set data: 00.
4) Select page: 0, address: 01, and set data: 00.

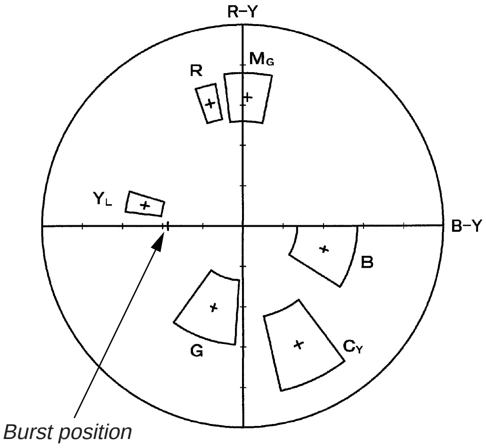


Fig. 5-1-11.

8. Auto White Balance & LV Standard Data Input

Adjust the white balance reference at 3200K, and adjust the normal coefficient of the light value.

Subject	Clear chart (Color reproduction adjustment frame)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	3C to 41

Note1: This adjustment should be carried out upon completion of "Color reproduction adjustments".

Note2: After the power is turned on, this adjustment can be done only once.

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	82	01	Set the data.
3	6	16	02	Set the data.
4				Wait for 2 sec.
5	6	01	11	Set the data, and press PAUSE button.
6	6	01	0D	Set the data, and press PAUSE button.
7	6	02		Check that the data changes to "01". (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 3C to 41.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	16	00	Set the data, and press PAUSE button.
3	6	82	00	Set the data.
4	0	01	00	Set the data.
5				Perform "Auto White Balance Adjustment".

9. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note3)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	42, 43
Specified Value	R ratio: 2B40 to 2BC0 B ratio: 5E20 to 5EE0

Note1: After the power is turned on, this adjustment can be done only once.

Note2: Perform "Auto White Balance & LV Standard Data Input" before this adjustment.

Note3: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
Display data

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2	0	01	01	Set the data.
3	6	82	01	Set the data.
4	F	B8		Write down the data.
5	F	B8	2B	Set the data, and press PAUSE button.
6	F	B9		Write down the data.
7	F	B9	80	Set the data, and press PAUSE button.
8	F	BA		Write down the data.
9	F	BA	5E	Set the data, and press PAUSE button.
10	F	BB		Write down the data.
11	F	BB	80	Set the data, and press PAUSE button.
12	6	01	A7	Set the data, and press PAUSE button.
13				Wait for 2 sec.
14	6	01	A5	Set the data, and press PAUSE button.
15	6	02		Check that the data changes to "01". (Note4)
16	6	01	3F	Set the data, and press PAUSE button.
17	0	03	04	Set the data.
18	1			Check that the display data (Note3) satisfies the R ratio specified value.
19	0	03	05	Set the data.
20	1			Check that the display data (Note3) satisfies the B ratio specified value.

Note4: The adjustment data will be automatically input to page: F, address: 42, 43.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	82	00	Set the data.
3	F	B8		Set the data that is written down at step 4, and press PAUSE button.
4	F	B9		Set the data that is written down at step 6, and press PAUSE button.
5	F	BA		Set the data that is written down at step 8, and press PAUSE button.
6	F	BB		Set the data that is written down at step 10, and press PAUSE button.
7	0	03	00	Set the data.
8	0	01	00	Set the data.

10. White Balance Check

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.4 and 0.1
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-12. A to B

Switch setting:

1) POWER .... CAMERA
2) NIGHT SHOT .... OFF
3) DIGITAL ZOOM (Menu display) .... OFF
4) STEADY SHOT (Menu display) .... OFF

Checking method:

Order	Page	Address	Data	Procedure
				Indoor white balance check
1				Check that the lens is not covered with either filter.
2	6	82	01	Set the data.
3	6	01	0F	Set the data, and press PAUSE button.
4				Check that the center of the white luminance point is within the circle shown Fig. 5-1-12. A.
5	6	01	00	Set the data, and press PAUSE button.
				Outdoor white balance check
6				Place the C14 filter on the lens.
7	6	01	3F	Set the data, and press PAUSE button.
8				Check that the center of the white luminance point is within the circle shown Fig. 5-1-12. B.
9				Remove the C14 filter.
				LV data check
10				Place the ND filter 1.5 (1.0+0.1+0.4) on the lens.
11	6	01	0F	Set the data, and press PAUSE button.
12				Wait for 2 sec.
13	0	03	06	Set the data.
14	1			Check that the display data (Note) satisfies the specified value. Specified value: 0000 to 0BC0

Note: Displayed data of the adjustment remote commander.

1 : XX : XX
Display data (the last two "XX : XX")

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	82	00	Set the data.
3	0	03	00	Set the data.

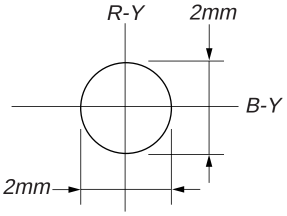


Fig. 5-1-12. (A)

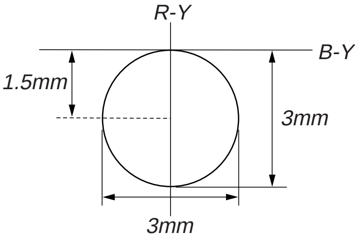


Fig. 5-1-12. (B)

11. Angular Velocity Sensor Sensitivity Adjustment

Precautions on the Parts Replacement

There are two types of repair parts.

Type A: ENC03JA
Type B: ENC03JB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations. After replacing, re-adjust according to the adjusting method after replacement.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Subject	Arbitrary
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	5E, 5F
Specified Value	2900 to 4D00

Note1: Displayed data of the adjustment remote commander.
1 : XX : XX
└─── Display data

Note2: SI-028 board: DCR-TRV230/TRV330
SI-029 board: DCR-TRV530

Switch setting:

1) STEADY SHOT (Menu display) .... ON
2) ZOOM .... Center

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	5E	6D	Set the data, and press PAUSE button.
3	F	5F	67	Set the data, and press PAUSE button.
				Pitch sensor check (SI-028/029 board SE301)
4	0	03	11	Set the data.
5	1			Check that the display data (Note1) satisfies the specified value.
				Yaw sensor check (SI-028/029 board SE302)
6	0	03	12	Set the data.
7	1			Check that the display data (Note1) satisfies the specified value.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	0	01	00	Set the data.
2	0	03	00	Set the data.
3				Move the camcorder, and check that the steady shot operations have been performed normally

1-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note2: Switch setting:
LCD panel .... Close

Note3: CF-079 board: DCR-TRV230/TRV330
CF-080 board: DCR-TRV530

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN1108 of VC-254 board.
Connect the Measuring Instruments via the CPC-13 jig (J-6082-443-A).
The following table shows the Pin No. and signal name of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	SWP	11	VCO
2	AFC F0	12	EVF VG
3	BPF MONI	13	DV RF SWP
4	FO ADJ RF IN	14	RF IN
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	RF AGC OUT	17	TMS
8	VC RF SWP	18	TCK
9	EVF VR (*1), COM DC (*2)	19	TDO
10	EVF VB (*1), N.C. (*2)	20	TDI

*1 : CF-079 board (Part No. suffix: 11)
CF-080 board (Part No. suffix: 11 or 12)
*2 : CF-079 board (Part No. suffix: 12 or later)
CF-080 board (Part No. suffix: 13 or later)

Table 5-1-10.

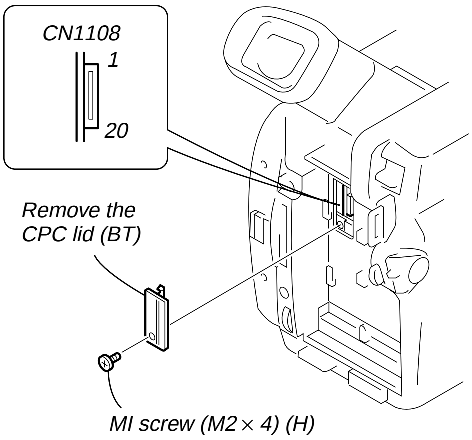


Fig. 5-1-13.

1. VCO Adjustment (CF-079/080 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑪ of CN1108 of VC-254 board (VCO)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	92, 93
Specified Value	f = 15734 ± 30Hz

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	92		Change the data and set the VCO frequency (f) to the specified value.
3	D	92		Press PAUSE button.
4	D	92		Read the data, and this data is named D_{92}.
5				Convert D_{92} to decimal notation, and obtain D_{92}'. (Note)
6				Calculate D_{93}' using following equations (Decimal calculation) When $D_{92}' \leqq 231$ $D_{93}'=D_{92}'+24$ When $D_{92}'>231$ $D_{93}'=255$
7				Convert D_{93}' to a hexadecimal number, and obtain D_{93}. (Note)
8	D	93	D_{93}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note: Refer to “Table 5-4-1. Hexadecimal-decimal Conversion Table”.

2. RGB AMP Adjustment (CF-079/080 board)

Set the D range of the RGB driver used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN1108 OF VC-254 board (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	95
Specified Value	A = 7.44 ± 0.10V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	95		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	D	95		Press PAUSE button.
4	0	01	00	Set the data.

3. Contrast Adjustment (CF-079/080 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN1108 of VC-254 board (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	99
Specified Value	A = 2.46 ± 0.10V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	99		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	D	99		Press PAUSE button.
4	0	01	00	Set the data.

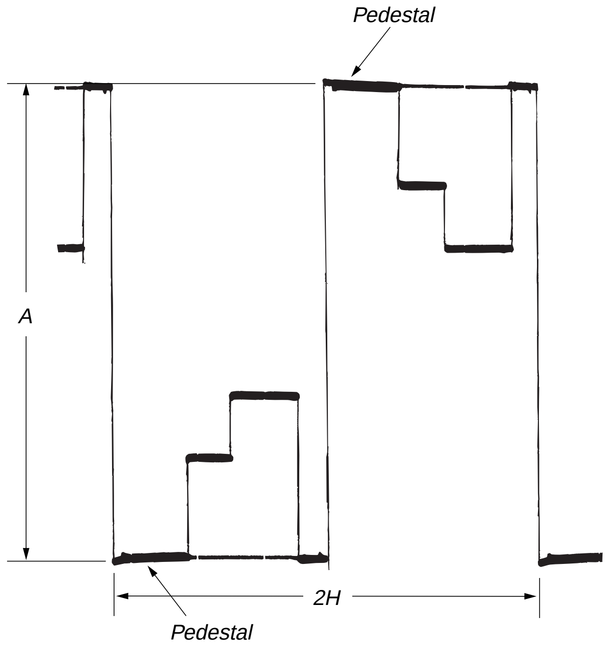


Fig. 5-1-14.

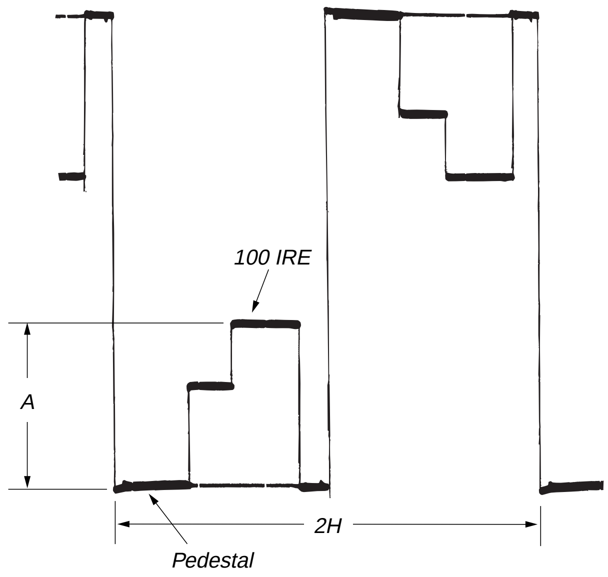


Fig. 5-1-15.

4. COM DC Adjustment (CF-079 board (Part No. suffix: 12 or later)) (CF-080 board (Part No. suffix: 13 or later))

Set the reference level of the video signal for driving the LCD to an appropriate level. If deviated, the screen image will be whitish.

Mode	Camera
Subject	Arbitrary
Measurement Point	+ probe: Pin ⑫ of CN1108 of VC-254 board (EVF VG) – probe: Pin ⑨ of CN1108 of VC-254 board (COM DC)
Measuring Instrument	Digital volt meter
Adjustment Page	D
Adjustment Address	94
Specified Value	A= +0.3 ± 0.1Vdc

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	94		Change the data and set the DC voltage (A) to the specified value. (The data should be “00” to “3F”.)
3	D	94		Press PAUSE button.
4	0	01	00	Set the data.

1-5. LCD SYSTEM ADJUSTMENT

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Set the LCD BRIGHT (Menu display) to the center.
Set the LCD COLOR (Menu display) to the center.

Note 4: PD-138 board: DCR-TRV230/TRV330
PD-139 board: DCR-TRV530

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN5502 of the PD-138/139 board. Connect the measuring instruments via the multi CPC jig (J-6082-311-A). The following table shows the Pin No. and signal name of CN5502.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	XVD OUT
3	VG	4	PANEL COM/PSIG
5	VR	6	MAKER CHECK
7	XHD	8	XHD OUT
9	GND	10	GND

Table 5-1-11.

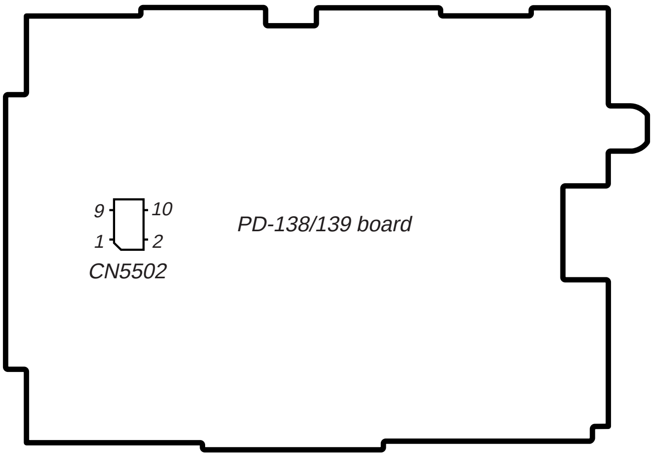


Fig. 5-1-16.

[LCD Type Check]

By measuring the resistor value between Pin ⑥ of CN5502 and GND, the type of LCD can be discriminated.

Resistor value	1.0kΩ	47kΩ
LCD type	2.5 LCD TYPE SH (61k)	3.5 LCD TYPE SO (123k)
PD board	PD-138	PD-139
DCR-	TRV230/TRV330	TRV530

Table 5-1-12.

[Adjusting Procedure]

DCR-TRV230/TRV330:

1. VCO adjustment
2. RGB AMP adjustment
3. Contrast adjustment
4. COM AMP adjustment
5. V-COM adjustment
6. White balance adjustment

DCR-TRV530:

1. VCO adjustment
2. RGB AMP adjustment
3. Black limit adjustment
4. Contrast adjustment
5. Center level adjustment
6. V-COM adjustment
7. White balance adjustment

1. VCO Adjustment (PD-138/139 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑧ of CN5502 (XHD OUT)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	A2, A3
Specified Value	f = 15734 ± 30Hz

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A2		Change the data and set the VCO frequency (f) to the specified value.
3	D	A2		Press PAUSE button.
4	D	A2		Read the data, and this data is named D_{A2}.
5				Convert D_{A2} to decimal notation, and obtain D_{A2}'. (Note)
6				Calculate D_{A3}' using following equations (Decimal calculation) [DCR-TRV230/TRV330] When $D_{A2}' \leqq 232$ $D_{A3}'=D_{A2}'+23$ When $D_{A2}'>232$ $D_{A3}'=255$ [DCR-TRV530] When $D_{A2}' \leqq 246$ $D_{A3}'= D_{A2}'+9$ When $D_{A2}'>246$ $D_{A3}'=255$
7				Convert D_{A3}' to a hexadecimal number, and obtain D_{A3}. (Note2)
8	D	A3	D_{A3}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

2. PSIG Gray Adjustment (PD-139 board) (DCR-TRV530)

Set the uniformity improvement signal to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A7
Specified Value	A = 5.00 ± 0.1V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A7		Change the data and set the PSIG signal level (A) to the specified value. (The data should be "00" to "7F")
3	D	A7		Press PAUSE button.
4	0	01	00	Set the data.

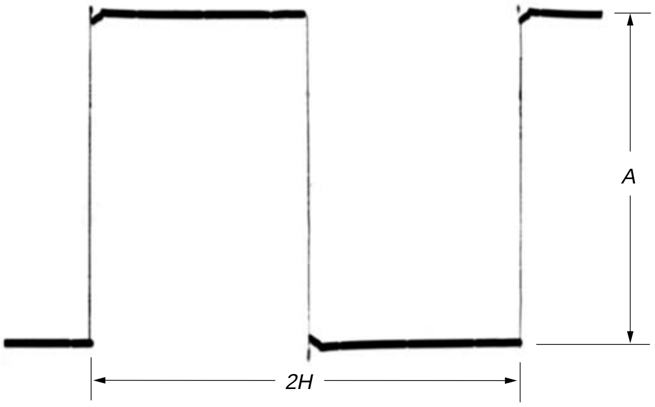


Fig. 5-1-17.

3. RGB AMP Adjustment (PD-138 board) (DCR-TRV230/TRV330)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) External trigger: Pin ④ of CN5502 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A5
Specified Value	A = 3.72 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A5		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value. (The data should be “00” to “3F”)
3	D	A5		Press PAUSE button.
4	0	01	00	Set the data.

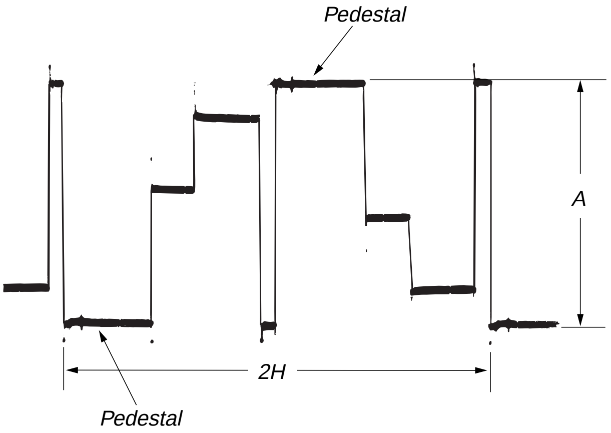


Fig. 5-1-18.

4. RGB AMP Adjustment (PD-139 board) (DCR-TRV530)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) External trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A5
Specified Value	A = 7.58 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A5		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value. (The data should be “00” to “FF”)
3	D	A5		Press PAUSE button.
4	0	01	00	Set the data.
5				Perform “Black Limit Adjustment”.

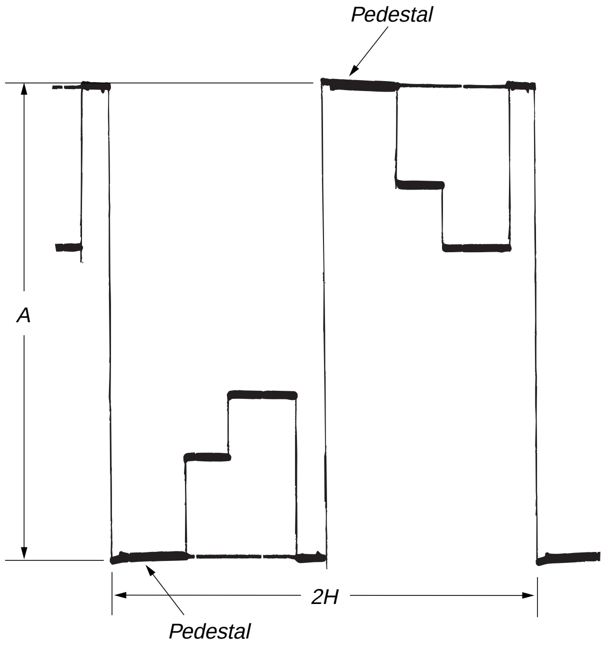


Fig. 5-1-19.

5. Black Limit Adjustment (PD-139 board) (DCR-TRV530)

Set the dynamic range of the LCD driver to an appropriate level. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A6
Specified Value	A = 8.10 ± 0.08V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	0E	61	Set the data.
3	2	0F	5B	Set the data.
4	D	A6		Change the data and set the PSIG signal amplitude (A) to the specified value. (The data should be "00" to "0F".)
5	D	A6		Press PAUSE button.
6	2	0E	00	Set the data.
7	2	0F	00	Set the data.
8	0	01	00	Set the data.
9				Check that the specified value of "RGB AMP Adjustment" is satisfied. If not, perform "RGB AMP Adjustment".

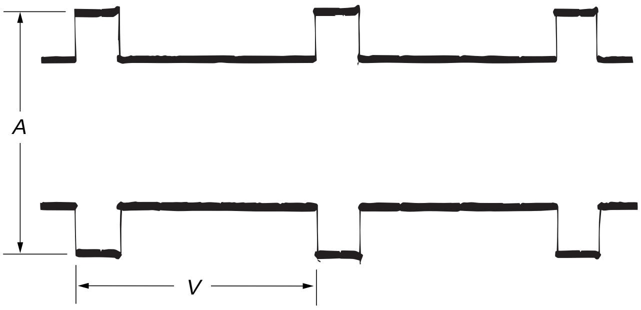


Fig. 5-1-20.

6. Contrast Adjustment (PD-138 board) (DCR-TRV230/TRV330)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) External trigger: Pin ④ of CN5502 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	AA
Specified Value	A = 3.50 ± 0.07V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	AA		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	D	AA		Press PAUSE button.
4	0	01	00	Set the data.

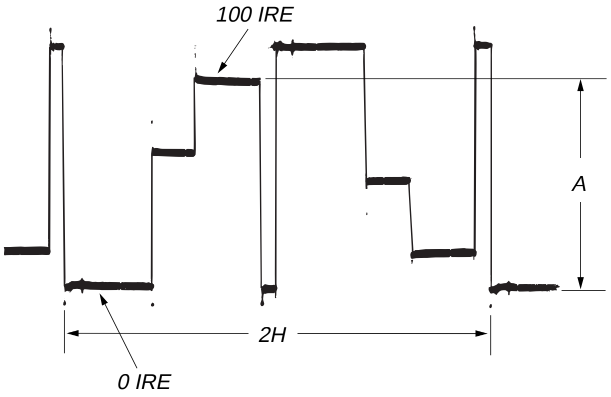


Fig. 5-1-21.

7. Contrast Adjustment (PD-139 board) (DCR-TRV530)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG) External trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	AA
Specified Value	A = 2.76 ± 0.07V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	AA		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	D	AA		Press PAUSE button.
4	0	01	00	Set the data.

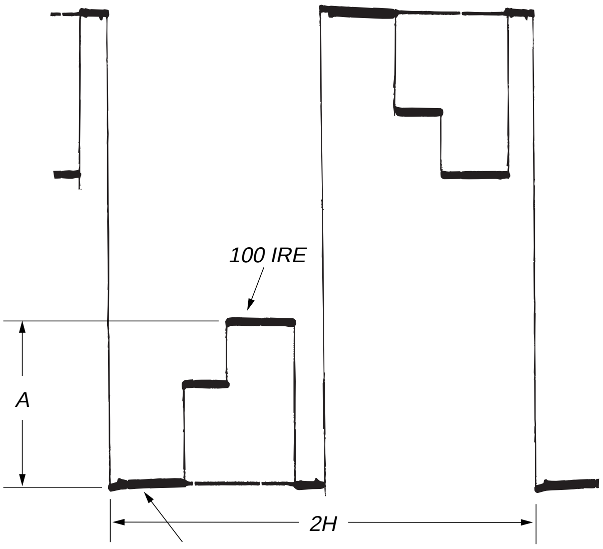


Fig. 5-1-22.

8. Center Level Adjustment (PD-139 board) (DCR-TRV530)

Set the video signal center level of LCD panel to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	D
Adjustment Address	AB
Specified Value	A = 7.00 ± 0.03Vdc

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	AB		Change the data and set the DC voltage (A) to the specified value. (The data should be "00" to "7F".)
3	D	AB		Press PAUSE button.
4	0	01	00	Set the data.

9. COM AMP Adjustment (PD-138 board) (DCR-TRV230/TRV330)

Set the common electrode drive signal level of LCD to the specified value.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A7
Specified Value	A = 6.36 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A7		Change the data and set the PANEL COM signal level (A) to the specified value.
3	D	A7		Press PAUSE button.
4	0	01	00	Set the data.

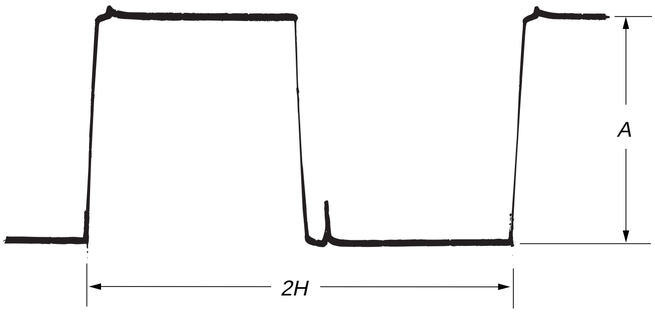


Fig. 5-1-23.

10. V-COM Adjustment (PD-138/139 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.

If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	A4
Specified Value	The brightness difference between the section A and section B is minimum.

Note: This adjustment should be carried out upon completion of the following adjustments.

[DCR-TRV230/TRV330]
- RGB AMP Adjustment
- Contrast Adjustment
- COM AMP Adjustment

[DCR-TRV530]
- RGB AMP Adjustment
- Black Limit Adjustment
- Contrast Adjustment
- Center Level Adjustment

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A4		Change the data so that the brightness of the section A and that of the section B is equal. [DCR-TRV230/TRV330] The data should be “00” to “FF”. [DCR-TRV530] The data should be “00” to “3F”
3	D	A4		[DCR-TRV230/TRV330] Subtract 8 from the data. [DCR-TRV530] Subtract 2 from the data.
4	D	A4		Press PAUSE button.
5	0	01	00	Set the data.

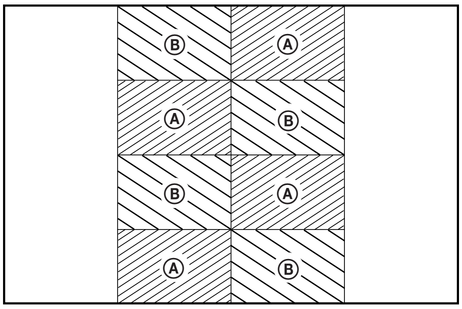


Fig. 5-1-24.

11. White Balance Adjustment (PD-138/139 board)

Correct the white balance.

If deviated, the reproduction of the LCD screen may degenerate.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	A8, A9
Specified Value	The LCD screen should not be colored.

Note1: Check the white balance only when replacing the following parts.
If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC5501

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A8	80	Set the data, and press PAUSE button.
3	D	A9	80	Set the data, and press PAUSE button.
4	D	A9		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	D	A8		Change the data so that the LCD screen is not colored.
6	D	A8		Press PAUSE button.
7	D	A9		Change the data so that the LCD screen is not colored.
8	D	A9		Press PAUSE button.
9	D	A9		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

5-2. MECHANISM SECTION ADJUSTMENT

Mechanism Section adjustments, checks, and replacement of mechanism parts, refer to the separate volume “8mm Video Mechanism Adjustment Manual Ⅸ M2000 Mechanism ”.

2-1. Hi8/STANDARD8 MODE

2-1-1. OPERATING WITHOUT CASSETTE

1) Refer to “Section 2. DISASSEMBLY” and supply the power with the cabinet assembly removed. (So that the mechanical deck can be operated.)
2) Connect the adjustment remote commander to the LANC jack.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Close the cassette compartment without loading a cassette and complete loading.
5) Select page: 0, address: 01, and set data: 01.
6) Select page: F, address: 22, set data: 81, and press the PAUSE button of the adjustment remote commander.
7) Select page: D, address: 10, set data: 10, and press the PAUSE button of the adjustment remote commander.
8) Disconnect the power supply of the unit, and connect it again.
9) Select page: 2, address: 2E, and set data: 02.
   By carrying out the above procedure, the unit can be operated without loading a cassette. (Note2)
   Be sure to carry out “Processing after Operations” after checking the operations.
   Set the data of page: D, address: 10 to “12”, if the sensor ineffective mode, forced VTR power supply ON mode is to be used together.
   Note 2: Except for the camera recording mode.

[Procedure after checking operations]

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 22, set data: 80, and press the PAUSE button of the adjustment remote commander.
3) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 2E, and set data: 00.
5) Select page: 0, address: 01, and set data: 00.
6) Disconnect the power supply of the unit.

2-1-2. TAPE PATH ADJUSTMENT

1. Preparations for Adjustment

1) Clean the tape path face (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 01.
5) Select page: 2, address: 2E, and set data: 02.
6) Select page: F, address: 22, set data: 88, and press the PAUSE button of the adjustment remote commander.
   (Be sure to perform “Processing after operation” after completing adjustments.)
7) Connect the oscilloscope to VC-254 board CN1108 via CPC-13 jig (J-6082-443-A).
   Channel 1: VC-254 board, CN1108 Pin ⑤
   External trigger: VC-254 board, CN1108 Pin ⑧
8) Playback Hi8/standard8 alignment tape for tracking.
   (WR5-1NP)
9) Check that the oscilloscope RF waveform is normal at the entrance and exit.
   If not normal, adjust according to the separate volume “8mm Video Mechanical Adjustment Manual Ⅸ M2000 Mechanism ”.
10) Perform “Processing after operations”, after completing adjustment.

CN1108 of VC-254 board

Pin No.	Signal Name	Pin No.	Signal Name
1	SWP	11	VCO
2	AFC F0	12	EVF VG
3	BPF MONI	13	DV RF SWP
4	F0 ADJ RF IN	14	RF IN
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	RF AGC OUT	17	TMS
8	VC RF SWP	18	TCK
9	EVF VR/COM DC	19	TDO
10	EVF VB/N.C.	20	TDI

Table 5-2-1.

[Procedure after operations]

1) Connect the adjustment remote commander, and turn on the HOLD switch.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 2, address: 2E, and set data: 00.
4) Select page: F, address: 22, set data: 80, and press the PAUSE button of the adjustment remote commander.
5) Select page: 0, address: 01, and set data: 00.
6) Remove the power supply from the unit.

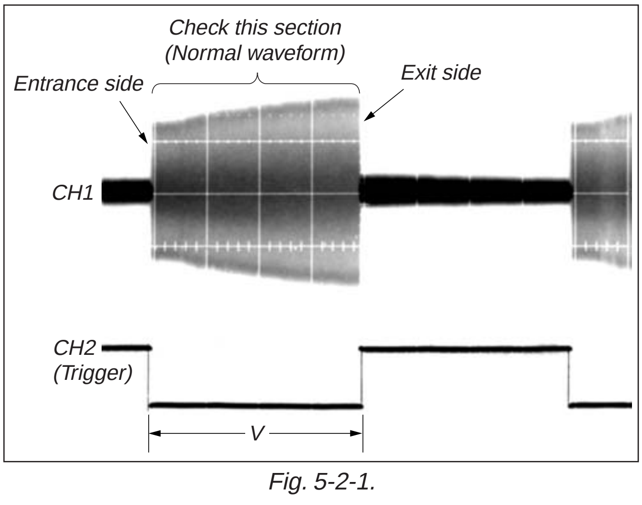


Fig. 5-2-1.

2-2. DIGITAL8 MODE

2-2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0C, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the record mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

2-2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0B, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the playback mode automatically.)
   Note: The function buttons becomes inoperable.
5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

2-2-3. OVERALL TAPE PATH CHECK

1. Recording of the tape path check signal

1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Set to the camera recording mode.
5) Select page: 3, address: 1C, set data: 5D, and press the PAUSE button of the adjustment remote commander.
6) Record for several minutes.
7) Release the recording mode.
8) Select page: 3, address: 1C, set data: 00, and press the PAUSE button.

2. Tape path check

1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-254 board CN1108 via the CPC-13 jig (J-6082-443-A).
   Channel 1: VC-254 board, CN1108 Pin ⑯ (Note)
   External trigger: VC-254 board, CN1108 Pin ⑬
   Note: Connect a 75Ω resistor between Pins ⑯ of CN1108 and ⑥ (GND).
5) Select page: 2, address: 2E, and set data: 01.
6) Playback the tape path check signal.
7) Select page: 3, address: 33, and set data: 08.
8) Select page: 3, address: 26, and set data: 31.
9) Check that the oscilloscope RF waveform is flat at the entrance and exit.
   If not flat, perform “2-1-2. TAPE PATH ADJUSTMENT “ of “2-1. Hi8/STANDARD 8 MODE”.
10) Select page: 3, address: 26, and set data: 00.
11) Select page: 3, address: 33, and set data: 00.
12) Select page: 2, address: 2E, and set data: 00.

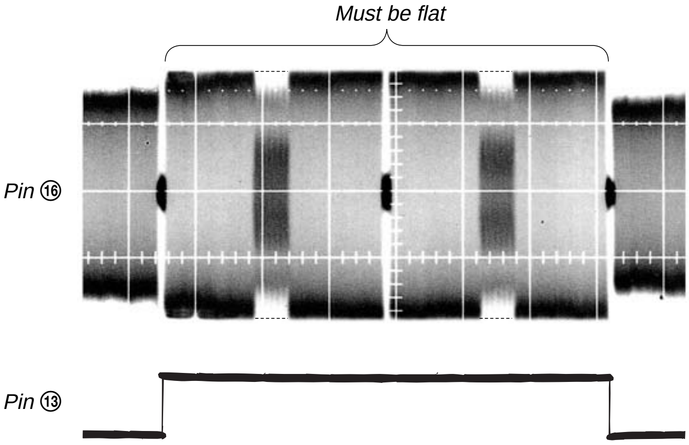


Fig. 5-2-2.

5-3. VIDEO SECTION ADJUSTMENT

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment to Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band width above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Digital8 alignment tapes
    - SW/OL standard (WR5-2D)
      Parts code: 8-967-993-22
    - Audio operation check for NTSC (WR5-3ND)
      Parts code: 8-967-993-32
    - System operation check for NTSC (WR5-5ND)
      Parts code: 8-967-993-42
12) Hi8/standard8 alignment tapes
    - For tracking adjustment (WR5-1NP)
      Parts code : 8-967-995-02
    - For video frequency characteristics adjustment (WR5-7NE)
      Parts code : 8-967-995-13
    - For checking Standard 8 mode operations
      For LP (WR5-4NL)
        Parts code : 8-967-995-51
      For SP (WR5-5NSP)
        Parts code : 8-967-995-42

    Note : The following alignment tapes can also be used.
    WR5-4NSP (8-967-995-41)

    - For checking Hi8 mode operations
      For LP (WR5-8NLE)
      Parts code : 8-967-995-52
      For SP (WR5-8NSE)
      Parts code : 8-967-995-43
    - For Checking AFM stereo operations (WR5-9NS)
      Parts code : 8-967-995-23
    - For BPF adjustment (WR5-11NS)
      Parts code : 8-967-995-71
13) Adjustment remote commander (J-6082-053-B)
14) CPC-13 jig (J-6082-443-A)
15) Power code (J-6082-223-A)

    Note : Connect the adjustment remote commander to the LANC jack, and set the HOLD switch to the “ADJ” side.
16) IR receiver jig (J-6082-383-A)
17) Extension cable (100P, 0.5mm)(J-6082-352-A)
    For extension between the PC-082 board (CN1901) and the VC-254 board (CN1104).

3-1-2. Precautions on Adjusting

Note1: SI-028 board: DCR-TRV230/TRV330
SI-029 board: DCR-TRV530

Note2: CF-079 board: DCR-TRV230/TRV330
CF-080 board: DCR-TRV530

Note3: CD-292 board: DCR-TRV230/TRV330
CD-315 board: DCR-TRV530

1) The adjustments of this unit are performed in the VTR mode or camera mode.
   To set to the VTR mode, set the power switch to "VCR or PLAYER" or set the "Forced VTR Power ON mode" using the adjustment remote commander (Note4).
   To set to the Camera mode, set the power switch to "CAMERA" or set the "Forced Camera Power ON mode" using the adjustment remote commander (Note5).
   After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note6)
2) The front panel block (SI-028/029 board, focus ring, microphone unit) need not be connected except during "IR transmitter adjustment" and "Audio adjustment". To remove, disconnect the following connector.
   VC-254 board CN1116 (26P 0.5mm)
3) As removing the cabinet (R) assembly (removing CN1117 of the VC-254 board) means removing the lithium 3V power supply (BT101 on the CF-079/080 board), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) assembly has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data (data of page: 2, address: B0 to C6) and the data on history use (data of page: 2, address: A2 to AA). (Refer to "5-4.Service Mode".)
4) The cabinet (R) assembly (CF-079/080 board, LCD block, viewfinder block) need not be connected to operate the VTR block. (Use the adjustment remote commander, to operate the VTR block.) When removing the cabinet (R) assembly, disconnect the following connector.
   1. VC-254 board CN1117 (45P, 0.5mm)
   2. VC-254 board CN1120 (20P, 0.8mm)
5) The Memory stick connector need not be connected. To remove, disconnect the following connector.
   (DCR-TRV330/TRV530)
   PC-082 board CN1153 (12P 0.5mm)
6) To open the PC-082 board, disconnect the following connectors.
   (DCR-TRV330/TRV530)
   1. PC-082 board CN1152 (6P 0.5mm)
   2. PC-082 board CN1901 (100P 0.5mm)
   And use the following extension cable between the PC-082 board CN1901 and VC-254 board CN1104.
   J-6082-352-A (100P, 0.5mm)
7) The lens block (CD-292/315 board) need not be connected. To remove, disconnect the following connectors.
   1. VC-254 board CN1501 (16P, 0.5mm)
   2. VC-254 board CN1551 (24P, 0.5mm)
8) By setting the "Forced VTR Power ON mode" or "Forced Camera Power ON mode", the video section can be operate even if the cabinet (L) assembly (SS-1380 block) has been removed. When removing the cabinet (L) assembly, disconnect the following connector.
   FU-150/154 board CN402 (12P 0.8mm)

Note4: Setting the "Forced VTR Power ON" mode (VTR mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button.

The above procedure will enable the VTR power to be turned on with the cabinet (L) assembly (SS-1380 block) removed.
After completing adjustments, be sure to exit the "Forced VTR Power ON mode".

Note5: Setting the "Forced Camera Power ON" mode (Camera mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button.

The above procedure will enable the camera power to be turned on with the cabinet (L) assembly (SS-1380 block) removed.
After completing adjustments, be sure to exit the "Forced Camera Power ON mode".

Note6: Exiting the "Forced Power ON" mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-254 board CN1108. Connect the measuring instruments via the CPC-13 jig (J-6082-443-A). The following table lists the pin numbers and signal names of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	SWP	11	VCO
2	AFC F0	12	EVF VG
3	BPF MONI	13	DV RF SWP
4	FO ADJ RF IN	14	RF IN
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	RF AGC OUT	17	TMS
8	VC RF SWP	18	TCK
9	EVF VR (*1), COM DC (*2)	19	TDO
10	EVF VB (*1), N.C. (*2)	20	TDI

*1 : CF-079 board (Part No. suffix: 11)
CF-080 board (Part No. suffix: 11 or 12)
*2 : CF-079 board (Part No. suffix: 12 or later)
CF-080 board (Part No. suffix: 13 or later)

Table 5-3-1.

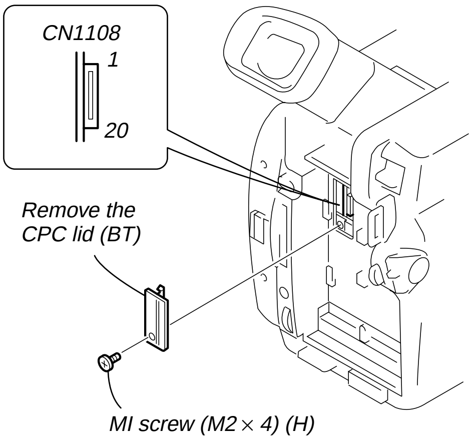

CN1108
1
20
Remove the CPC lid (BT)
MI screw (M2 × 4) (H)

Fig. 5-3-1.

3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-3-2 and perform the adjustments.

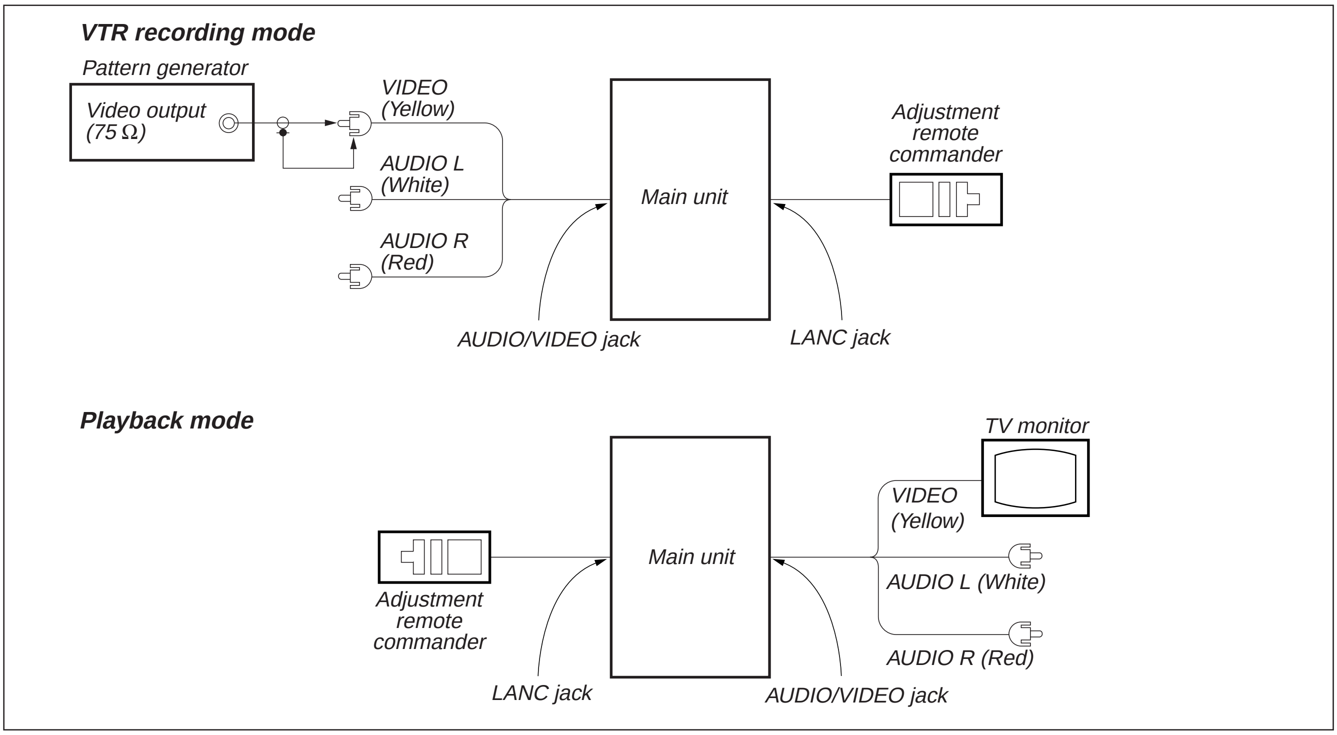

VTR recording mode
Pattern generator
Video output (75 Ω)
VIDEO (Yellow)
AUDIO L (White)
AUDIO R (Red)
Main unit
Adjustment remote commander
AUDIO/VIDEO jack
LANC jack
Playback mode
TV monitor
VIDEO (Yellow)
AUDIO L (White)
AUDIO R (Red)
Main unit
Adjustment remote commander
LANC jack
AUDIO/VIDEO jack

Fig. 5-3-2.

3-1-5. Alignment Tape

The following table lists alignment tapes which are available.
Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

Digital8 alignment tape

Name	Usage
SW/OL standard (WR5-2D)	Switching position adjustment
Audio operation check (WR5-3ND),	Audio system adjustment
System operation check (WR5-5ND)	Operation check

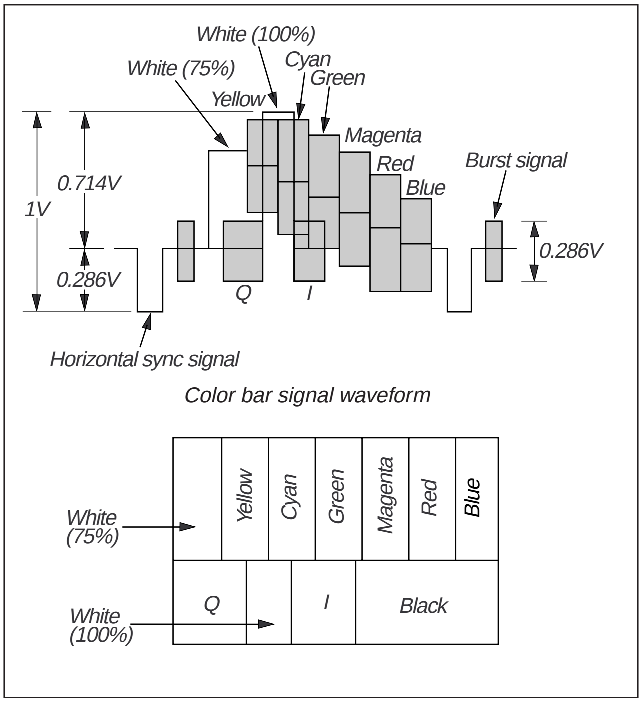
Hi8/standard 8 alignment tape

Name	Record-ing mode	Tape type	Tape speed	Usage
Tracking WR5-1NP	Standard 8	MP	SP	Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7NE	Hi8	ME	SP	Frequency characteristics adjustment
Operation check (SP mode) WR5-5NSP	Standard 8	MP	SP	Checking operations
Operation check (SP mode) WR5-8NSE	Hi8	ME	SP	
Operation check (LP mode) WR5-4NL	Standard 8	MP	LP	
Operation check (LP mode) WR5-8NLE	Hi8	ME	LP	
AFM stereo Operation check WR5-9NS	Standard 8	MP	SP	AFM stereo Checking operations
BPF adjustment WR5-11NS	Standard 8	MP	SP	BPF adjustment

Tape type
ME .... Particle type metal tape
MP .... Evaporated type metal tape

Fig.5-3-3. shows the 75% color bar signals recorded on the alignment tape.

Note: Measure using the VIDEO terminal (Terminated at 75Ω).



Color bar signal waveform

Fig. 5-3-3. Color Bar Signal of the Alignment Tape

3-1-6. Input/output Level and Impedance

Video input/output
Special stereo minijack, 1Vp-p, 75Ω, unbalanced, sync negative

S video input/output
4-pin mini DIN
Luminance signal: 1Vp-p, 75Ω, unbalanced, sync negative
Chrominance signal: 0.286Vp-p, 75Ω, unbalanced

Audio input/output
Special stereo minijack:
Input: –7.5dBs, input impedance more than 47kΩ
Output: –7.5dBs, (at load impedance 47kΩ), impedance less than 2.2kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of B, C, D, E, F, 7, 8 Page Data

If the B, C, D, E, F, 7, 8 page data is erased due to some reason, perform "1-2. INITIALIZATION OF B, C, D, E, F, 7, 8 PAGE DATA", of "5-1. CAMERA SECTION ADJUSTMENT".

2. Serial No. Input

2-1. Company ID Input

Write the company ID in the EEPROM (nonvolatile memory).

Page	C
Address	E8, E9, EA, EB, EC

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: C, addresses: E8 to EC.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
E8	08
E9	00
EA	46
EB	01
EC	02

3) Select page: 0, address: 01, and set data: 00.

2-2. Serial No. Input

Write the serial No. and model code in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to hexadecimal, and write in the EEPROM.

Page	C
Address	ED, EE, EF

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the serial No. on the name plate, and take it as D_1.
   Example: If the serial No. is 77881.
   D_1=77881
   Note: Use six digits of the low rank when a serial No. is more than seven digits.
3) Obtain D_2 and H_1 corresponding to D_1 from Table 5-3-2.
   Example: If D_1 is "77881".
   D_2=D_1–65536=12345
   H_1=FE

D_1 (Decimal)	D_2 (Decimal)	H_1 (Hexadecimal) (Service model code)
000001 to 065535	D_1	FE
065536 to 131071	D_1–65536	FE
131072 to 196607	D_1–131072	FE

Table 5-3-2.

4) Input H_1 to page: C, address: ED. (Model code input)
   Example: If H_1 is "FE".
   Select page: C, address: ED, set data: FE, and press the PAUSE button.
5) Obtain the maximum decimal not exceeding D_2 from Table 5-3-3, and take this as D_3.
   Example: If D_2 is "12345".
   D_3=12288
6) Obtain the hexadecimal corresponding to D_3 from Table 5-3-3, and take this as H_3.
   Example: If D_3 is "12288".
   H_3=3000
7) Obtain the difference D_4 between D_2 and D_3. (Decimal calculation, $0 \leqq D_4 \leqq 255$)
   D_4= D_2–D_3
   Example: If D_2 is "12345" and D_3 is "12288".
   D_4=12345–12288=57
8) Convert D_4 to hexadecimal, and take this as H_4.
   (Refer to "Hexadecimal-decimal conversion table" in "5-4. Service Mode".)
   Example: If D_4 is "57".
   H_4=39
9) Input the upper 2 digits of H_3 to page: C, address: EE.
   Example: If H_3 is "3000".
   Select page: C, address: EE, set data: 30, and press the PAUSE button.
10) Input H_4 to page: C, address: EF.
    Example: If H_4 is "39".
    Select page: C, address: EF, set data: 39, and press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

Table 5-3-3.

3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of “27MHz Origin Oscillation Adjustment” of “VIDEO SYSTEM ADJUSTMENT” is satisfied.

Adjusting Procedure:

1. REEL FG adjustment
2. PLL fo & LPF fo pre-adjustment
3. Switching position adjustment
4. AGC center level and APC & AEQ adjustment
5. PLL fo & LPF fo fine adjustment
6. Hi8/Standrd8 switching position adjustment
7. CAP FG offset adjustment

1. REEL FG Adjustment (VC-254 board)

Compensates the dispersion of the hall elements.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	17, 30
Specified Value	00 or 01 or 04 or 05

Adjusting method:

Order	Page	Address	Data	Procedure
1				Close the cassette compartment without inserting a cassette.
2	0	01	01	Set the data.
3	3	01	1C	Set the data, and press PAUSE button.
4	3	02		Check that the data changes to “00”,
5	3	03		Check that the data is “00” or “01” or “04” or “05”. (Note)
6	0	01	00	Set the data.

Note: If the data is other value, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)

Data	Contents of defect
02, 03, 06, 07	T reel is defective
08, 09, 0C, 0D	S reel is defective
0A, 0B, 0E, 0F	S reel and T reel are defective

2. PLL fo & LPF fo Pre-Adjustment (VC-254 board)

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	The data of page: 3, address: 02 is “00”. The data of page: 3, address: 03 is “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	01	30	Set the data, and press PAUSE button.
3	3	02		Check that the data changes to “00” within 10 sec. (Note)
4	3	03		Check that the data is “00”. (Note)
5	0	01	00	Set the data.

Note: If it isn’t satisfied, select page: C, address: 21, set the following data, and press the PAUSE button, and repeat steps 2 to 4.

	Setting data
When the data of page: C, address: 21 is “CA”.	CE
When the data of page: C, address: 21 is “CE”.	C6
When the data of page: C, address: 21 is “C6”.	D2
When the data of page: C, address: 21 is “D2”	C2

If bit2, bit3, bit4, bit5 or bit6 of page: 3, address: 03 data is “1”, there are errors.

For the error contents, see the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

Bit value of page: 3, address: 03 data	Error contents
bit 2 = 1 or bit 3 = 1	PLL fo fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL fo adjustment is defective
bit 6 = 1	LPF fo is defective

3. Switching Position Adjustment (VC-254 board)

To obtain normal playback waveform output during the Digital8 playback mode, adjust the switching position.

Mode	VTR playback
Signal	SW/OL reference tape (WR5-2D)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	00

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL reference tape and enter the VTR STOP mode.
2	0	01	01	Set the data.
3	3	21		Check that the data is “02”. (Note1)
4	3	01	0D	Set the data, and press PAUSE button.
5	3	02		Check that the data changes to “00”.
6	3	03		Check that the data is “00”. (Note2)
7	C	10		Check that the data is other than “EE”. (Note3)
8	0	01	00	Set the data.

Note 1: If the data of page: 3, address: 21 is “72”, the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 4 and higher.

Note 2: If bit 0 of the data is “1”, the A channel is defective. If bit 1 is “1”, the B channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.) If bit3 of the data is “1”, the tape end being played, and adjustment has errors.

Note 3: If the data is “EE” rewind the tape and repeat steps 1 to 7.

When the A channel is defective

Data of page:C, address:10	Contents of defect
EE	Writing into EEPROM (IC4502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC3301 (CAIN)

When the B channel is defective

Data of page:C, address:12	Contents of defect
E8	Adjustment data is out of range
E7	No data is returned from IC3301 (CAIN)

4. AGC Center Level and APC & AEQ Adjustment

4-1. Preparations before adjustments

Mode	Camera recording
Subject	Arbitrary

Note: Use a Hi8 MP tape.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	2A	C8	Set the data.
3				Record the camera signal for three minutes.

4-2. AGC Center Level Adjustment (VC-254 board)

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑯ of CN1108 (RF MON) (Note 1) Ext. trigger: Pin ⑬ of CN1108 (DV RFSWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	The data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑯ and Pin ⑥ (GND) of CN1108. 75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at “Preparations before adjustments”
2	0	01	01	Set the data.
3	2	2E	01	Set the data.
4	3	33	08	Set the data.
5				Confirm that the playback RF signal is stable. (Fig. 5-3-4.)
6	3	01	23	Set the data, and press PAUSE button.
7	3	02		Check that the data is “00”.
8	3	03		Check that the data is “00”. (Note2)
9				Perform “APC & AEQ Adjustment”.

Note 2: If the data of page: 3, address: 03 is other than “00”, adjustment has errors.

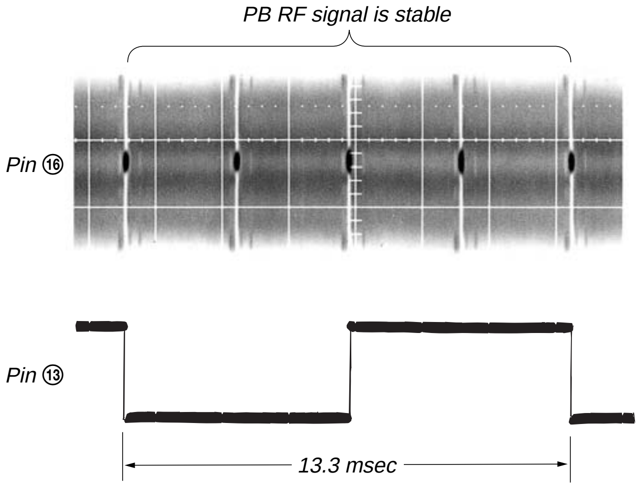


Fig. 5-3-4.

4-3. APC & AEQ Adjustment (VC-254 board)

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑯ of CN1108 (RF MON) (Note 1) Ext. trigger: Pin ⑬ of CN1108 (DV RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 2C
Specified Value	The data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑯ and Pin ⑥ (GND) of CN1108.
75Ω resistor (Parts code: 1-247-804-11)

Note 2: The “AGC Center Level Adjustment” must have already been completed before starting this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	18	25	Set the data, and press PAUSE button.
3	C	19	25	Set the data, and press PAUSE button.
4	C	1B	25	Set the data, and press PAUSE button.
5	C	1C	25	Set the data, and press PAUSE button.
6	C	21	CA	Set the data, and press PAUSE button.
7	C	2C	03	Set the data, and press PAUSE button.
8				Playback the recorded signal at “Preparations before adjustments”
9	2	2E	01	
10	3	33	08	Set the data.
11				Confirm that the playback RF signal is stable. (Fig. 5-3-5.)
12	3	01	07	Set the data, and press PAUSE button.
13	3	02		Check that the data changes from “07” to “00” in about 20 seconds after pressing PAUSE button.
14	3	03		Check that the data is “00”. (Note3)
15				Perform “Processing after Completing Adjustments”.

Note 3: If the data is other than “00”, adjustment has errors.

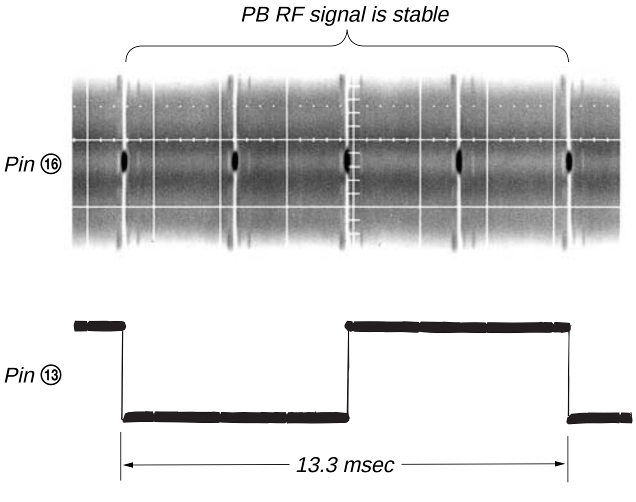


Fig. 5-3-5.

4-4. Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	2E	00	Set the data.
3	3	33	00	Set the data.
4	8	2A	00	Set the data, and press PAUSE button.
5	0	01	00	Set the data.

5. PLL fo & LPF fo Fine Adjustment (VC-254 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Display data of page: 3
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	The data of page: 3, address: 02 is “00”. The data of page: 3, address: 03 is “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	01	30	Set the data, and press PAUSE button.
3	3	02		Check that the data changes to “00” within 10 sec.
4	3	03		Check that the data is “00”. (Note)
5	0	01	00	Set the data.

Note: If bit2, bit3, bit4, bit5 or bit 6 of the data is “1”, there are errors. For the error contents, see the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

Bit value of page: 3, address: 03	Error contents
bit 2 = 1 or bit 3 = 1	PLL fo fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL fo adjustment is defective
bit 6 = 1	LPF fo is defective

6. Hi8/Standard8 Switching Position Adjustment (VC-254 board)

If deviated in this case causes switching noise or jitter on the Hi8/Standard8 mode played back screen.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For tracking adjustment (WR5-1NP)
Measurement Point	CH1: Pin ⑧ of CN1108 (VC RF SWP) CH2: Pin ⑤ of CN1108 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	62, 63
Specified Value	t1=0 ± 10 µsec

Adjusting Method:

Order	Page	Address	Data	Procedure
1				Set to the stop mode.
2	0	01	01	Set the data.
3	F	22	C0	Set the data, and press PAUSE button.
4	2	2E	02	Set the data.
5				Set to the playback mode.
6	F	62		Change the data and minimize “t1”. (Coarse adjustment)
7	F	62		Press PAUSE button
8	F	63		Change the data and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
9	F	63		Press PAUSE button
10	F	22	80	Set the data, and press PAUSE button.
11	2	2E	00	Set the data.
12	0	01	00	Set the data.

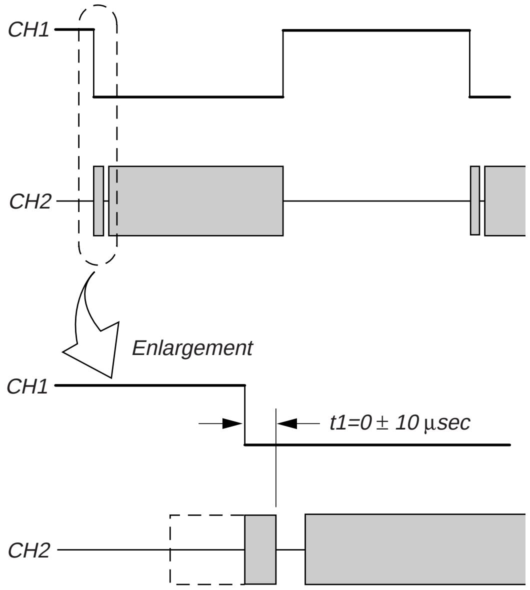


Fig. 5-3-6.

7. CAP FG Offset Adjustment (VC-254 board)

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur in the Hi8/Standard8 LP mode.

Mode	Playback
Signal	Hi8/standard 8 alignment tape : For checking operation (WR5-5NSP)
Measurement Point	Pin ⑮ of CN1108 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	64
Specified value	Duty = 50 ± 1 %

Adjusting method:

Order	Page	Address	Data	Procedure
1				Set to the stop mode.
2	0	01	01	Set the data.
3	2	2E	02	Set the data.
4				Set to the playback mode.
5	6	01	81	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01".
7	6	01	00	Set the data, and press PAUSE button.
8				Check that Duty of CAP FG signal satisfies the specified value. If not, repeat steps 5 to 8.
9	2	2E	00	Set the data.
10	0	01	00	Set the data.

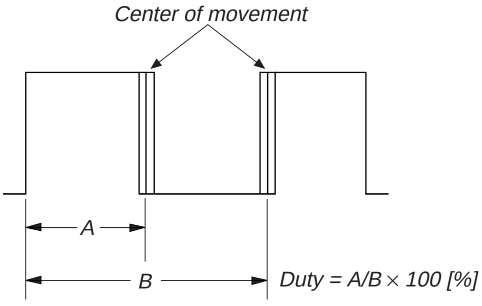


Fig. 5-3-7.

3-4. VIDEO SYSTEM ADJUSTMENTS

1. 27MHz Origin Oscillation Adjustment (VC-254 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Mode	Camera
Subject	Not required
Measurement Point	Pin ⑯ of IC1502
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	4D
Specified Value	f=13500000 ± 68Hz

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	4D		Change the data and set the frequency (f) to the specified value.
3	F	4D		Press PAUSE button.
4	0	01	00	Set the data.

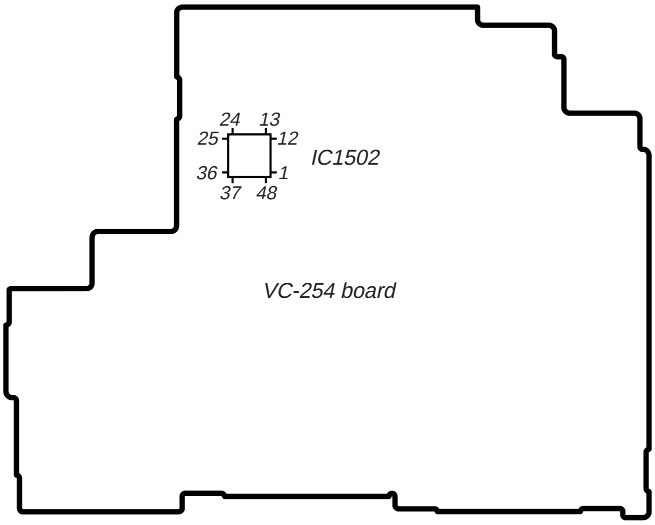


Fig. 5-3-8.

2. Chroma BPF fo Adjustment (VC-254 board)

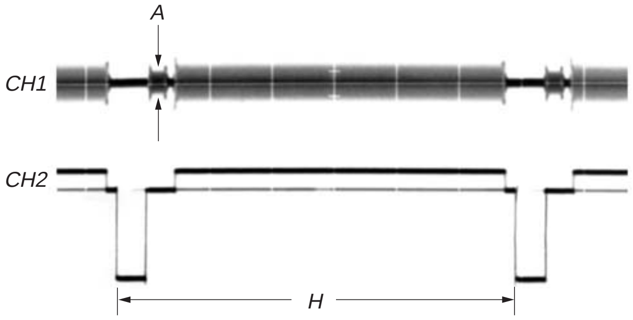
Set the center frequency of IC3701 chroma band-pass filter.

Mode	VTR stop
Signal	No signal
Measurement Point	CH1: Chroma signal terminal of S VIDEO OUT jack (75Ω terminated) CH2: Y signal terminal of S VIDEO OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	28
Specified Value	A = 100mVp-p or less B = 200mVp-p or more

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	11	10	Set the data, and press PAUSE button.
3				Check that the burst signal (B) is output to the chroma signal terminal of S VIDEO OUT jack.
4	3	0C	04	Set the data, and press PAUSE button.
5	C	28		Change the data for minimum amplitude of the burst signal level (A). (The data should be “00” to “07”.)
6	C	28		Press PAUSE button.
7	3	0C	00	Set the data, and press PAUSE button.
8				Check that the burst signal level (B) satisfies the specified value.
9	D	11	00	Set the data, and press PAUSE button.
10	0	01	00	Set the data.

When the data of page: 3, address: 0C, is 04:



When the data of page: 3, address: 0C, is 00:

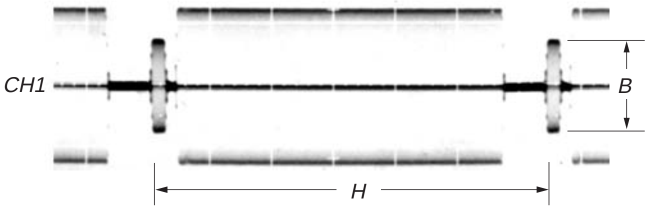


Fig. 5-3-9.

3. S VIDEO OUT Y Level Adjustment (VC-254 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Y signal terminal of S VIDEO OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	A = 1000 ± 20mV

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	11	10	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4	C	25		Change the data and set the Y signal level (A) to the specified value.
5	C	25		Press PAUSE button.
6	3	0C	00	Set the data, and press PAUSE button.
7	D	11	00	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

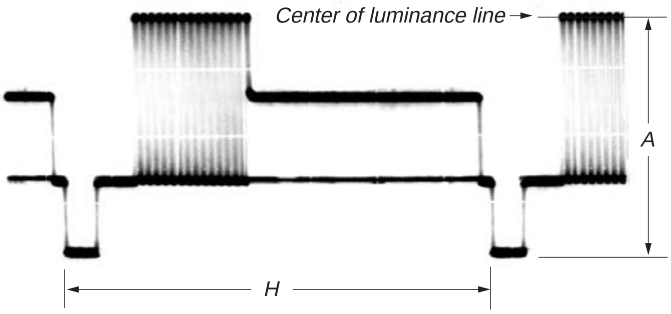


Fig. 5-3-10.

4. S VIDEO OUT Chroma Level Adjustment (VC-254 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Chroma signal terminal of S VIDEO OUT jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO OUT jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level: A = 714 ± 14mV Cb level: B = 714 ± 14mV Burst level: C = 286 ± 6mV

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	11	10	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4	C	26		Change the data and set the Cr signal level (A) to the specified value.
5	C	26		Press PAUSE button.
6	C	27		Change the data and set the Cb signal level (B) to the specified value.
7	C	27		Press PAUSE button.
8				Check that the burst signal level (C) is satisfied the specified value.
9	3	0C	00	Set the data, and press PAUSE button.
10	D	11	00	Set the data, and press PAUSE button.
11	0	01	00	Set the data.

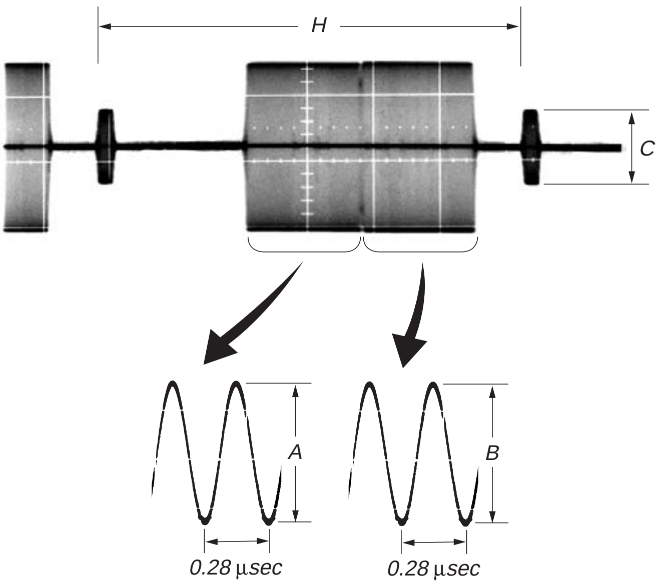


Fig. 5-3-11.

5. VIDEO OUT Y, Chroma Level Check (VC-254 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Video terminal of AUDIO/VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 293 ± 18mV Burst level: B = 286 ± 18mV

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	11	10	Set the data, and press PAUSE button.
3	3	0C	02	Set the data, and press PAUSE button.
4				Check that the sync signal level (A) satisfies the specified value.
5				Check that the burst signal level (B) satisfies the specified value.
6	3	0C	00	Set the data, and press PAUSE button.
7	D	11	00	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

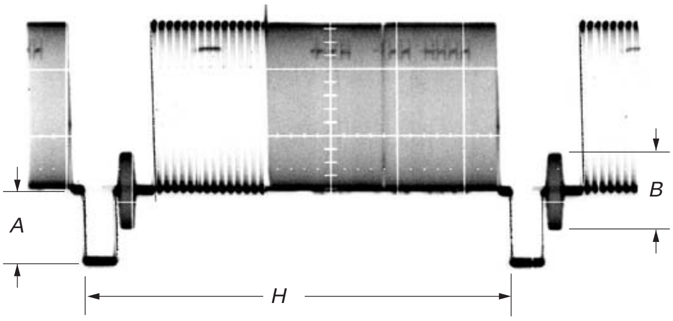


Fig. 5-3-12.

6. Hi8/Standard8 Y/C Output Level Setting (VC-254 board)

Set the Y/C signal output level during the Hi8/Standard8 playback mode.

Mode	VTR stop
Signal	No signal
Adjustment Page	F
Adjustment Address	67, 68

Note: Perform this adjustment when IC2201 or IC4901 is replaced.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	10	02	Set the data, and press PAUSE button.
3	6	6F	01	Set the data.
4	6	7F		Check that the data. When the data is “00”, proceed to step 8. When the data is “03”, proceed to step 5.
5	F	67	69	Set the data, and press PAUSE button.
6	F	68	64	Set the data, and press PAUSE button.
7				Proceed to step 10.
8	F	67	A0	Set the data, and press PAUSE button.
9	F	68	AA	Set the data, and press PAUSE button.
10	6	6F	00	Set the data.
11	D	10	00	Set the data, and press PAUSE button.
12	0	01	00	Set the data.

7. Hi8/standard 8mm AFC fo Adjustment (VC-254 board)

Adjust the pull-in range of the clock generator (IC2201) for A/D conversion during Hi8/standard 8mm playback.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ② of CN1108 (AFC f0)
Measuring Instrument	Digital voltmeter
Adjustment Page	F
Adjustment Address	65
Specified Value	A=1.40 ± 0.05Vdc Or the data of page: 6, address: 6E is "7C" to "84"

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	10	02	Set the data, and press PAUSE button.
3	3	0D	04	Set the data, and press PAUSE button.
4	6	63	04	Set the data.
5	6	6F	01	Set the data.
6	F	65	50	Set the data, and press PAUSE button.
7	6	01	C5	Set the data, and press PAUSE button.
8	6	02		Check that the data is "01".
9	6	01	00	Set the data, and press PAUSE button.
10	6	6E		Check that the data satisfies the specifies value. Or check that the DC voltage (A) satisfies the specified value. If outside, repeat steps 6 to 10.
11	3	0D	00	Set the data, and press PAUSE button.
12	6	63	00	Set the data.
13	6	6F	00	Set the data.
14	D	10	00	Set the data, and press PAUSE button.
15	0	01	00	Set the data.

3-5. IR TRANSMITTER ADJUSTMENTS

Adjust using the IR receiver jig (J-6082-383-A).

Note: If the distance between the IR receiver jig and the camcorder is below 1m, cover the LASER LINK emitter with a ND filter. (For example, when the distance is 30cm to 50cm, cover the LASER LINK emitter with a ND filter 1.0.)

Switch setting:

SUPER LASER LINK .... ON (Red LED is lit)

1. IR Video Carrier Frequency Adjustment (VC-254 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN003 of IR receiver jig (RF) (Or Pin ⑯ of IC3901 of VC-254 board)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	80
Specified Value	f = 11.85 ± 0.05 MHz

Connection of Equipment:

Connect the measuring device as shown in the following figure, and adjust.

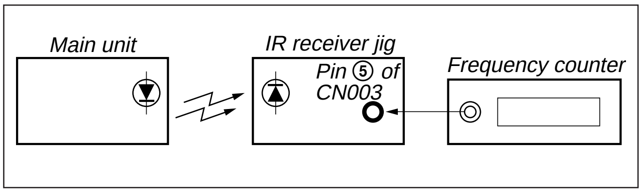


Fig. 5-3-13.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	0C	08	Set the data, and press PAUSE button.
3	F	80		Change the data, and set the video carrier frequency (f) to the specified value.
4	F	80		Press PAUSE button.
5	3	0C	00	Set the data, and press PAUSE button.
6	0	01	00	Set the data.

2. IR Video Deviation Adjustment (VC-254 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal of IR receiver jig (Terminated at 75Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	7E
Specified Value	A = 0.82 ± 0.05 V

Connection of Equipment:

Connect the measuring device as shown in the following figure, and adjust.

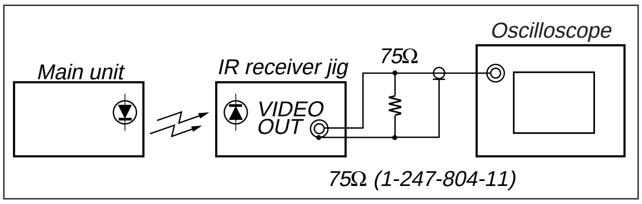


Fig. 5-3-14.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	0C	01	Set the data, and press PAUSE button.
3	F	7E		Change the data, set the video signal amplitude (A) to the specified value.
4	F	7E		Press PAUSE button.
5	3	0C	00	Set the data, and press PAUSE button.
6	0	01	00	Set the data.

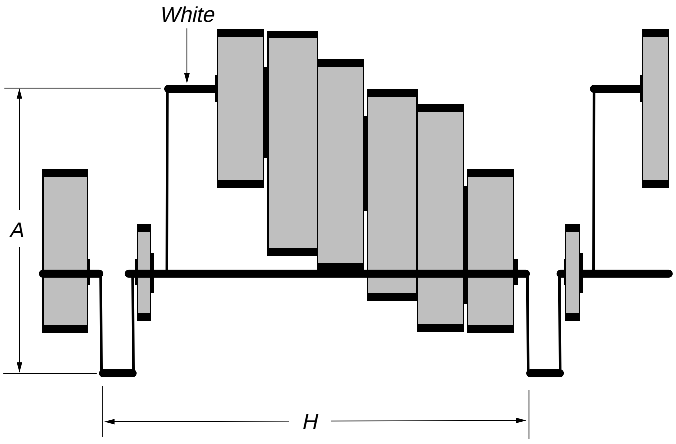


Fig. 5-3-15.

3. IR Audio Deviation Adjustment (VC-254 board)

Mode	VTR stop
Signal	Video : No signal Audio : 400Hz, –7.5dBs, Audio left and right terminal of AUDIO/VIDEO jack
Measurement Point	AUDIO L terminal and AUDIO R terminal of IR receiver jig (Terminated at 47kΩ)
Measuring Instrument	Audio level meter
Adjustment Page	F
Adjustment Address	7F
Specified Value	Signal level: –7.5 ± 1.0 dBs Level difference of L and R: Below 2dB

Connection of Equipment:
Connect the measuring device as shown in the following figure, and adjust.

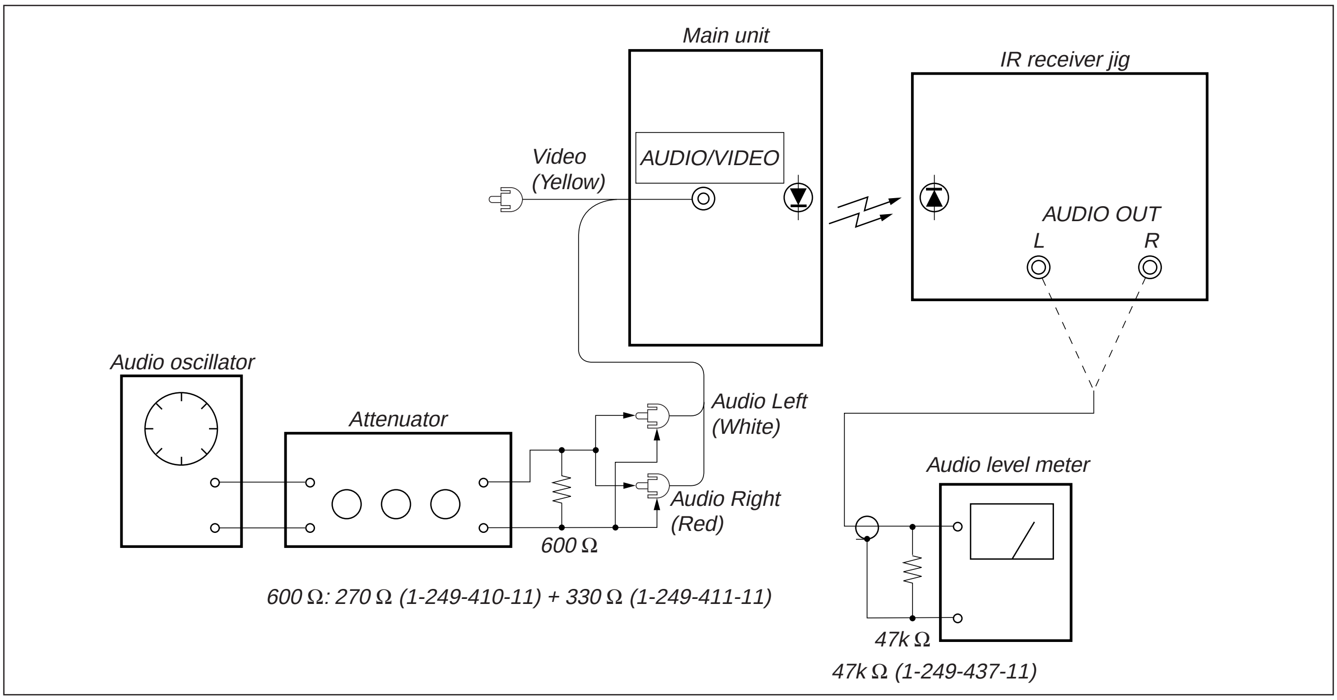

Main unit
IR receiver jig
Video
(Yellow)
AUDIO/VIDEO
AUDIO OUT
L
R
Audio oscillator
Attenuator
Audio Left
(White)
Audio Right
(Red)
Audio level meter
600 Ω
600 Ω: 270 Ω (1-249-410-11) + 330 Ω (1-249-411-11)
47k Ω
47k Ω (1-249-437-11)

Fig. 5-3-16.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2				Connect the audio level meter to the AUDIO L terminal of the IR receiver jig.
3	F	7F		Change the data and set the 400Hz audio signal level to the specified value.
4	F	7F		Press PAUSE button.
5				Connect the audio level meter to the AUDIO R terminal of the IR receiver jig.
6	F	7F		Check that the 400Hz audio signal level is within the specified value. If outside, repeat from step 2.
7	0	01	00	Set the data.

3-6. AUDIO SYSTEM ADJUSTMENTS

[Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 5-3-17.

[Adjustment Procedure]

1) Hi8/Standard8 AFM BPF fo adjustment
2) Hi8/Standard8 AFM 1.5MHz deviation adjustment
3) Hi8/Standard8 AFM 1.7MHz deviation adjustment
4) Digital8 playback level check
5) Overall level characteristics check
6) Overall distortion check
7) Overall noise level check
8) Overall separation check

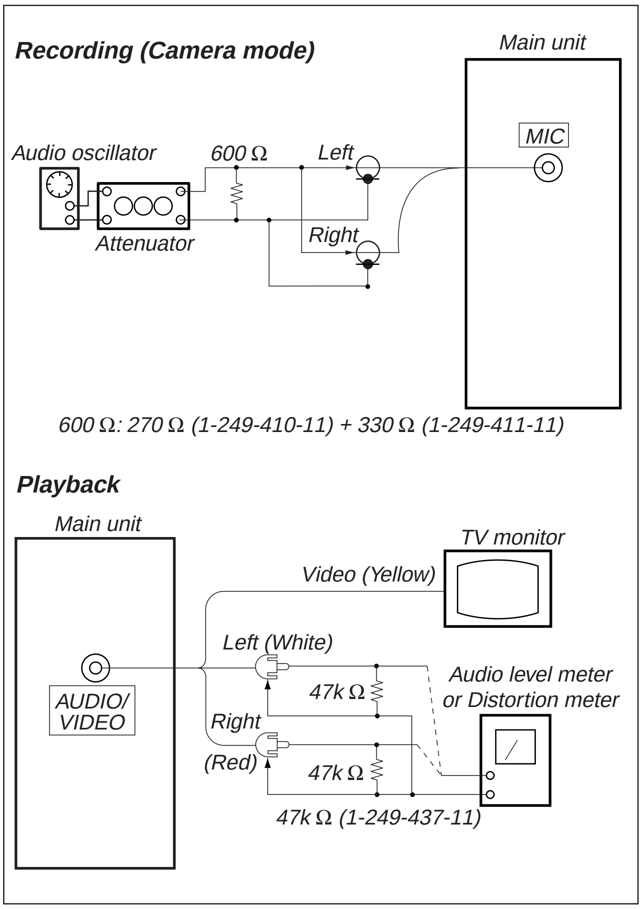

Recording (Camera mode)
Main unit
MIC
Audio oscillator
600 Ω
Left
Attenuator
Right
600 Ω: 270 Ω (1-249-410-11) + 330 Ω (1-249-411-11)
Playback
Main unit
TV monitor
Video (Yellow)
Left (White)
AUDIO/ VIDEO
47k Ω
Audio level meter or Distortion meter
Right (Red)
47k Ω
47k Ω (1-249-437-11)

Fig. 5-3-17.

1. Hi8/Standard8 AFM BPF fo Adjustment (VC-254 board)

Sets the BPF passing frequency of IC760 so that the AFM signal can separate from the playback RF signal properly. If deviated. the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For BPF adjustment (WR5-11NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Distortion meter
Adjustment Page	F
Adjustment Address	7D
Specified Value	The Main and Sub channel distortion rate should be almost the same (within ±1%) and minimum.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi SOUND switch (menu display) to “2”.
3) Select page: F, address: 7D, change the data and minimize the distortion rate.
4) Press the PAUSE button.
5) Set the Hi-Fi SOUND switch (menu display) to “1”.
6) Select page: F, address: 7D, change the data and minimize the distortion rate.
7) Press the PAUSE button.
8) Repeat steps 2) to 7) and set the data of address: 7D so that the distortions rates when the Hi-Fi SOUND switch is set to “2” and set to “1” respectively are almost the same and minimum.
9) Press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.
11) Set the Hi-Fi SOUND switch to “STEREO”.

2. Hi8/Standard8 AFM 1.5 MHz Deviation Adjustment (VC-254 board)

Adjust to the optimum 1.5MHz audio FM signal deviation.
If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Adjustment Page	F
Adjustment Address	7B
Specified Value	–7.5 ± 2.0dBs

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi SOUND switch (menu display) to “1”.
3) Select page: F, address: 7B, change the data and set the 400Hz signal level to the specified value.
4) Press the PAUSE button.
5) Set the Hi-Fi SOUND switch (menu display) to “STEREO”.
6) Select page: 0, address: 01, and set data: 00.

3. Hi8/Standard8 AFM 1.7 MHz Deviation Adjustment (VC-254 board)

Adjust to the optimum 1.7MHz audio FM signal deviation.
If improper, this causes deteriorated separation (with stereo signal).

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	7C
Specified Value	–7.5 ± 2.0dBs

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Set the Hi-Fi SOUND switch (menu display) to “2”.
3) Select page: F, address: 7C, change the data and set the 1kHz signal level to the specified value.
4) Press the PAUSE button.
5) Set the Hi-Fi SOUND switch (menu display) to “STEREO”.
6) Select page: 0, address: 01, and set data: 00.

4. Digital8 Playback Level Check

Mode	Playback
Signal	Digital8 alignment tape: For audio operation check (WR5-3ND)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF.

Checking Method:

1) Check that the playback signal level is the specified value.

5. Overall Level Characteristics Check

Mode	Recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0dBs

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack left and right.
2) Record the signal.
3) Playback the recorded section.
4) Check that the 400Hz signal level is the specified value.

6. Overall Distortion Check

Mode	Recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4%(200Hz to 6kHz BPF ON)

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack left and right.
2) Record the signal.
3) Playback the recorded section.
4) Check that the distortion is the specified value.

7. Overall Noise Level Check

Mode	Recording and playback
Signal	No signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:

1) Connect the left terminal of MIC jack and its ground terminal with a jumper wire.
2) Connect the right terminal of MIC jack and its ground terminal with a jumper wire.
3) Record the signal.
4) Playback the recorded section.
5) Check that the noise level is the specified value.
6) Remove the jumper wires.

8. Overall Separation Check

Mode	Recording and playback
Signal	No signal: MIC jack <left> [right] 400Hz, –66dBs signal: MIC jack <right> [left]
Measurement Point	AUDIO/VIDEO jack <left> [right]
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs

< >: Left channel check
[ ] : Right channel check

Checking Method:

1) Connect the <left> [right] terminal of MIC jack and its ground terminal with a jumper wire.
2) Input the 400Hz, –66dBs signal in the MIC jack <right> [left].
3) Record the signal.
4) Playback the recorded section.
5) Check that the signal level of the AUDIO/VIDEO jack <left> [right] is the specified value.
6) Remove the jumper wire.

5-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to “HOLD” (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-4-1.

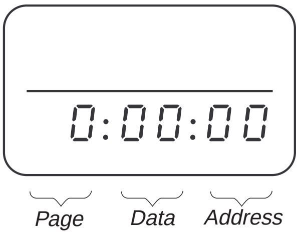


Fig. 5-4-1.

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (B, C, D, E, F, 7, 8 page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply (8.4 V) once.

2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

Lower digit of hexadecimal Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-4-1.

4-3. SERVICE MODE

Additional note on adjustment

Note: After the completion of the all adjustments, cancel the service mode by either of the following ways.

1) After data on page: D and F is restored, unplug the main power supply and remove the coin lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
2) After data on page: D and F is restored, select page: 0, address: 01, and return the data to 00. And when data on page:2 and 3 are changed, return data to the original condition.

1. Setting the Test Mode

Page F	Address 22

Data	Function
80	Normal
81	Test mode Various emergency prohibitions and releases Drum emergency, capstan emergency, loading motor emergency, reel emergency, tape top and end, DEW detection

Page D	Address 10

Data	Function
00	Normal
01	Forced camera power ON
02	Forced VTR power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D and F, the data set will be recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (8.4Vdc).
- After completing adjustments/repairs, be sure to return the data of page: D address: 10 to 00, and the data of page: F address: 22 to 80, and press the PAUSE button of the adjustment remote commander. And select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

2-1. C Page Emergence Memory Address

Page C	Address F4 to FF

Address	Contents
F4	EMG code when first error occurs
F6	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
F7	Lower: MSW code to be moved when first error occurs
F8	EMG code when second error occurs
FA	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
FB	Lower: MSW code to be moved when second error occurs
FC	EMG code when last error occurs
FE	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
FF	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (F4 to FF). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (F4 to F7). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (F8 to FB).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

Note : After completing adjustments, be sure to initialize the data of addresses F4 to FF to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 37, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

2-2. F Page Emergence Memory Address

Note 1: Emergence of PB mode only.

Page F	Address 10 to 1B

Address	Contents
10	EMG code when first error occurs
12	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
13	Lower: MSW code to be moved when first error occurs
14	EMG code when second error occurs
16	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
17	Lower: MSW code to be moved when second error occurs
18	EMG code when last error occurs
1A	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
1B	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (10 to 1B). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (10 to 13). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (14 to 17).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (18 to 1B).

Note 2: After completing adjustments, be sure to initialize the data of addresses 10 to 1B to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 10, set data: 00, and press the PAUSE button.
3) Select address: 11 to 1B and set data “00” into them in the same way as in address: 10.
4) Select page: 0, address: 01, and set data: 00.

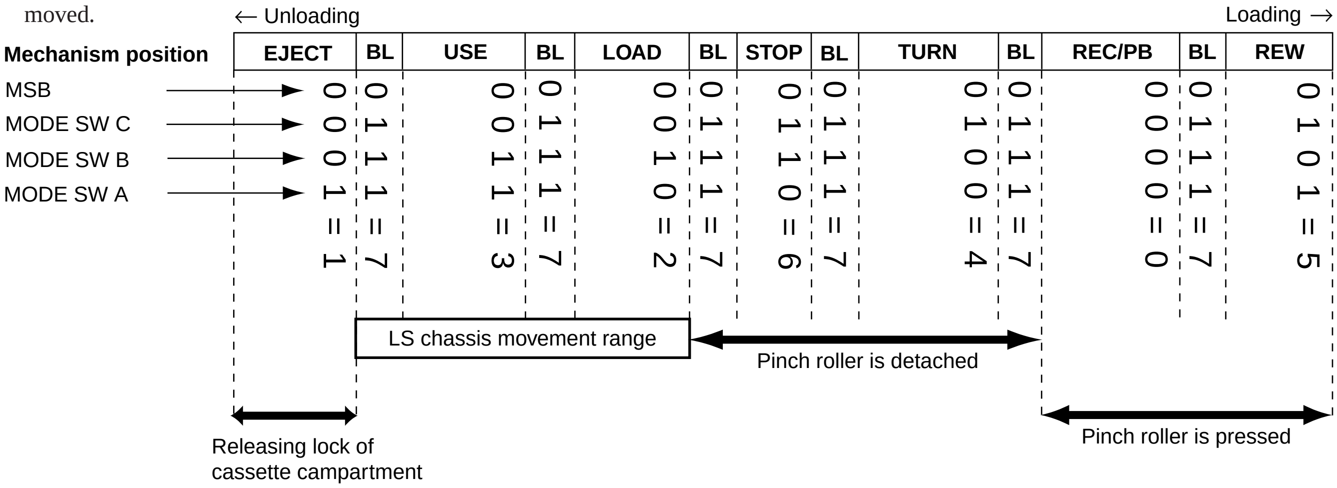
2-3. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in C page, addresses F4, F8 and FC (or F page, addresses 10, 14 and 18). The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T reel emergency during normal rotation
23	S reel emergency during normal rotation
24	T reel emergency (Short circuit between S reel terminal and T reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

2-4. MSW Code

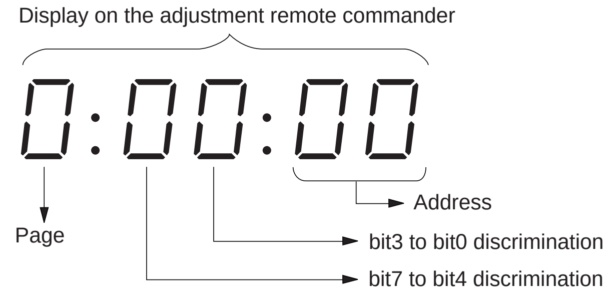
- The lower parts of the data of C page, addresses F6, FA and FE (or F page, addresses 12, 16 and 1A) represent the MSW codes (mode switch mechanism position) when errors occurs.
- The upper parts of the data of C page, addresses F6, FA and FE (or F page, addresses 12, 16 and 1A) represent, when the mechanism position is to be moved, the MSW codes at the start movement (when moving the loading motor).
- The lower parts of the data of C page, addresses F7, FB and FF (or F page, addresses 13, 17 and 1B) represent the MSW codes of the desired movement when the mechanism position is to be moved.


← Unloading
Loading →
Mechanism position
MSB
MODE SW C
MODE SW B
MODE SW A
EJECT
0 0 0 1 = 1
BL
0 1 1 1 = 7
USE
0 0 1 1 = 3
BL
0 1 1 1 = 7
LOAD
0 0 1 0 = 2
BL
0 1 1 1 = 7
STOP
0 1 1 0 = 6
BL
0 1 1 1 = 7
TURN
0 1 0 0 = 4
BL
0 1 1 1 = 7
REC/PB
0 0 0 0 = 0
BL
0 1 1 1 = 7
REW
0 1 0 1 = 5
LS chassis movement range
Pinch roller is detached
Releasing lock of cassette campartment
Pinch roller is pressed

Mechanism Position	MSW Code	Contents
EJECT	1	Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction.
BL	7	BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating.
USE	3	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position.
LOAD	2	Code during loading/unloading. Code that is used while the LS chassis is moving.
STOP	6	Normal stop position. The pinch roller separates, the tension regulator returns, and the brakes of both reels turn on.
TURN	4	Position at which is used when the pendulum gear swings from S to T or from T to S.
REC/PB	0	PB, REC, CUE, REV, PAUSE, FF positions. The pinch roller is pressed and tension regulator is on.
REW	5	REW position. REW are carried at this position. The mechanism will not move any further in the loading direction.

3. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for the following items. Us the table below to discriminate if the bit value is “1” or “0”.


Display on the adjustment remote commander
0:00:00
Address
Page
bit3 to bit0 discrimination
bit7 to bit4 discrimination

(Example) If the remote commander display is “8E”, bit value from bit 7 to bit 4 can be discriminated from the column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (C)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

4. Switch check (1)

Page 2	Address 43

Bit	Function	When bit value = 1	When bit value = 0
0	POWER SW (VTR MODE SW) (SS-1380 block)	OFF	ON (VCR/PLAYER)
1	POWER SW (CAM MODE SW) (SS-1380 block)	OFF	ON (CANERA)
2	START/STOP SW (SS-1380 block)	OFF	ON
3	EJECT SW (SS-1380 block)	OFF	ON
4	CC DOWN SW (Mechanism chassis)	OFF (UP)	ON (DOWN)
5	PHOTO FREEZE SW (SS-1380 block)	OFF	ON
6	POWER SW (PHOTO STBY SW) (SS-1380 block) *1	OFF	ON (MEMORY)
7			

*1: DCR-TRV330/TRV530

Using method:

1) Select page: 2, address: 43.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

5. Switch check (2)

Page 2	Address 49

Bit	Function	When bit value = 1	When bit value = 0
4	MIC jack (FP-273 flexible)	Used	Not used
5			
6	AUDIO/VIDEO jack (FP-270 flexible J102)	Used	Not used
7	S VIDEO jack (FP-270 flexible J101)	Not used	Used

Using method:

1) Select page: 2, address: 49.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

6. Switch check (3)

Page 3	Address 5A

Bit	Function	When bit value = 1	When bit value = 0
6	HEADPHONES jack (FP-273 flexible)	Used	Not used

Using method:

1) Select page: 3, address: 5A.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

7. Switch check (4)

Page 2	Address 60 to 65

Using method:

1) Select page: 2, address: 60 to 65.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data							
	00 to 0C	0D to 24	25 to 3F	40 to 5D	5E to 81	82 to AA	AB to D7	D8 to FF
60 (KEY AD0) (IC4803 (93))	EDIT SEARCH + (CF-079/080) (S117)	EDIT SEARCH – (CF-079/080) (S116)	SUPER LASER LINK (FP-275)	STOP (FP-275)	FF (FP-275)	REC (FP-275)		No key input
61 (KEY AD1) (IC4803 (94))		PHOTO (PHOTO START) (SS-1380)	PAUSE (FP-275)	REW (FP-275)	PLAY (FP-275)			No key input
62 (KEY AD2) (IC4803 (95))	MENU (CF-079/080) (S102)	EXPOSURE (SE-1380)	MENU EXECUTE (SE-1380)	TITLE (CF-079/080) (S108)	VOLUME + (CF-079/080) (S111)	VOLUME – (CF-079/080) (S113)	BACKLIGHT (CF-079/080) (S115)	No key input
63 (KEY AD3) (IC4803 (96))	MEMORY + (CF-079/080) (S103)*1	MEMORY – (CF-079/080) (S104)*1	MEMORY INDEX (CF-079/080) (S106)*1	MEMORY DELETE (CF-079/080) (S109)*1	MEMORY PLAY (CF-079/080) (S112)*1	MEMORY MIX (CF-079/080) (S114)*1	PANEL CLOSE	PANEL OPEN
64 (KEY AD4) (IC4803 (97))		SUPER NIGHT SHOT (FP-275)	END SEARCH (CF-079/080) (S105)	DISPLAY (CF-079/080) (S107)	PB ZOOM (CF-079/080) (S110)	FADER (CF-079/080) (S118)	FOCUS AUTO (FP-282)	FOCUS MANUAL (FP-282)
65 (KEY AD5) (IC4803 (98))		PANEL REVERSE (FP-283)						PANEL NORMAL (FP-283)

*1: DCR-TRV330/TRV530

8. Record of Use check

Note: When replacing the drum assembly, initialize the data of address: A2 to A4.

Page 2	Address A2 to AA

Bit	Function		Remarks
A2	Drum rotation counted time (BCD code)	Minute	
A3		Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4		Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
A5	User initial power on date (BCD code)	Year	After setting the clock, set the date of power on next
A6		Month	
A7		Day	
A8	Final condensation occurrence date (BCD code)	Year	
A9		Month	
AA		Day	

Using method:

1) The record of use data is displayed at page: 2, addresses: A2 to AA.
   Note: This data will be erased (reset) when the CF-079/080 board (VC-254 board CN1117 (45P)) is removed.

Initializing method:

1) Using the adjustment remote commander, select the object address and set data: 00.

9. Record of Self-diagnosis check

Page 2	Address B0 to C6

Address	Self-diagnosis code
B0	“Repaired by” code (Occurred 1st time) *1
B1	“Block function” code (Occurred 1st time)
B2	“Detailed” code (Occurred 1st time)
B4	“Repaired by” code (Occurred 2nd time) *1
B5	“Block function” code (Occurred 2nd time)
B6	“Detailed” code (Occurred 2nd time)
B8	“Repaired by” code (Occurred 3rd time) *1
B9	“Block function” code (Occurred 3rd time)
BA	“Detailed” code (Occurred 3rd time)
BC	“Repaired by” code (Occurred 4th time) *1
BD	“Block function” code (Occurred 4th time)
BE	“Detailed” code (Occurred 4th time)
C0	“Repaired by” code (Occurred 5th time) *1
C1	“Block function” code (Occurred 5th time)
C2	“Detailed” code (Occurred 5th time)
C4	“Repaired by” code (Occurred the last time) *1
C5	“Block function” code (Occurred the last time)
C6	“Detailed” code (Occurred the last time)

*1 : “01” → “C”, “03” → “E”

Using method:

1) The past self-diagnosis codes are displayed at page: 2, addresses: BC to C6. Refer to “SELF-DIAGNOSIS FUNCTION” for detail of the self-diagnosis code.
   Note: This data will be erased (reset) when the CF-079/080 board (VC-254 board CN1117 (45P)) is removed.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

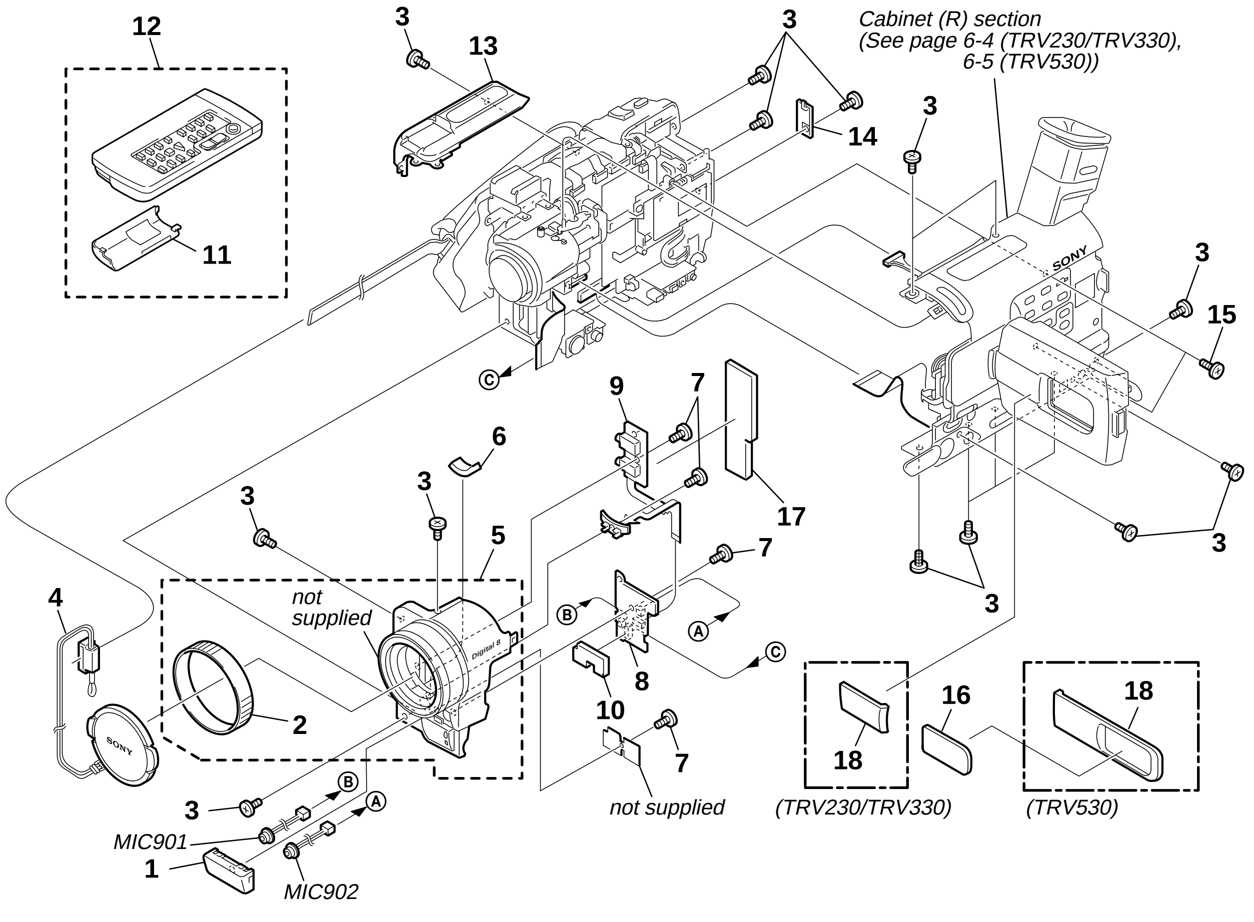
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

- Abbreviation
  CND : Canadian model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  BR : Brazilian model
  AR : Argentina model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

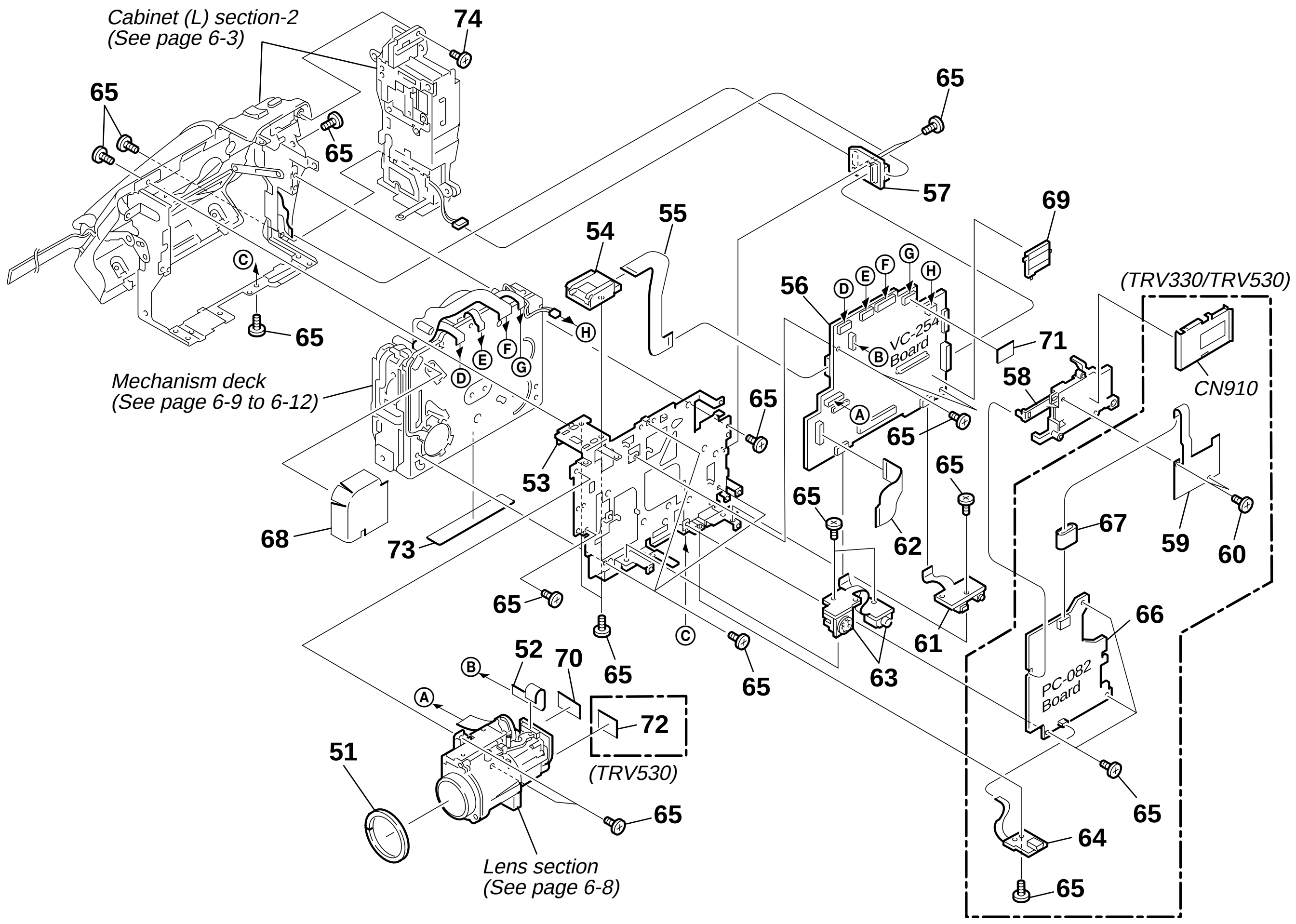
6-1-1. OVERALL SECTION



Ref. No.	Part No.	Description	Remarks
1	X-3951-161-1	GRILLE ASSY, MICROPHONE	
2	3-065-310-01	RING, RUBBER	
3	3-067-347-01	MI SCREW M2 (H)	
4	X-3949-376-1	CAP (N) ASSY, LENS	
5	X-3951-160-1	PANEL ASSY, FRONT	
6	3-066-722-01	CUSHION, SENSOR	
7	3-948-339-61	TAPPING	
8	A-7074-645-A	SI-028 (T) BOARD, COMPLETE (TRV230/TRV330)	
8	A-7074-673-A	SI-029 (T) BOARD, COMPLETE (TRV530)	
9	A-7074-651-A	FP-273 BOARD, COMPLETE	
10	3-065-327-01	CUSHION (MI)	

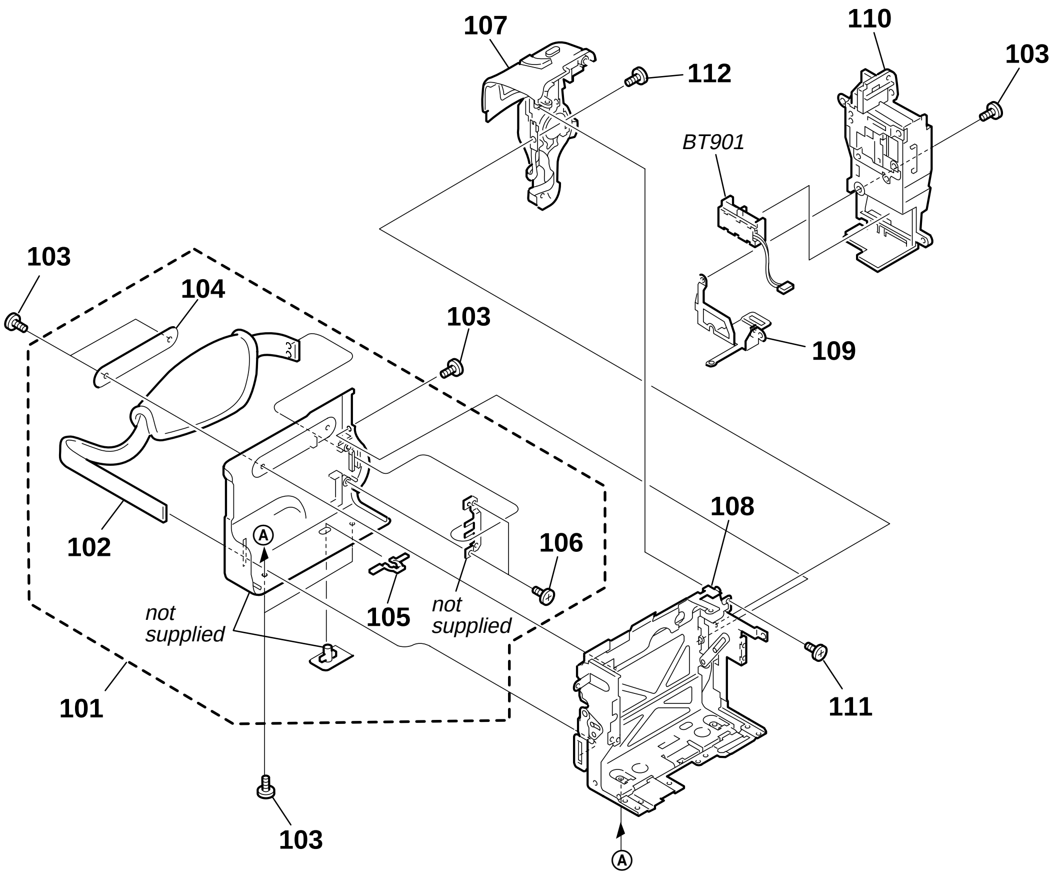
Ref. No.	Part No.	Description	Remarks
11	3-742-854-01	LID, BATTERY (FOR RMT-814)	
12	1-475-141-61	REMOTE COMMANDER (RMT-814)	
13	3-065-326-01	CABINET (UPPER)	
14	3-065-325-01	LID (BT), CPC	
15	3-065-567-01	TAPPING (M1.7)	
16	3-065-366-01	WINDOW (2), LCD	
17	3-066-720-01	CUSHION (SI)	
18	X-3951-258-1	COVER (138) ASSY, CPC (TRV230)	
18	X-3951-260-1	COVER (140) ASSY, CPC (TRV330)	
18	X-3951-264-1	COVER (148) ASSY, CPC (TRV530)	
MIC901	1-542-312-11	MICROPHONE (Rch)	
MIC902	1-542-312-11	MICROPHONE (Lch)	

6-1-2. CABINET (L) SECTION-1


Cabinet (L) section-2
(See page 6-3)
74
65
65
65
57
69
55
54
56
D E F G H
(TRV330/TRV530)
VC-254 Board
B
71
58
CN910
C
65
H
D E F G
Mechanism deck
(See page 6-9 to 6-12)
65
A
65
65
53
65
67
68
73
62
59
60
65
66
C
52
70
65
65
61
63
B
A
PC-082 Board
72
(TRV530)
51
65
65
64
65
Lens section
(See page 6-8)

Ref. No.	Part No.	Description	Remarks
51	3-066-721-01	CUSHION, LENS	
52	1-680-119-11	FP-265 FLEXIBLE BOARD	
53	3-065-372-01	FRAME, MD	
54	1-815-124-11	CONNECTOR, EXTERNAL (HOT SHOE)	(TRV330/TRV530)
54	1-815-124-21	CONNECTOR, EXTERNAL (HOT SHOE)(TRV230)	
55	1-680-118-11	FP-264 FLEXIBLE BOARD	
56	A-7096-436-A	VC-254 (BNA) BOARD, COMPLETE (SERVICE)	(TRV230)
56	A-7096-438-A	VC-254 (BFNA) BOARD, COMPLETE (SERVICE)	(TRV330)
56	A-7096-439-A	VC-254 (BFNS) BOARD, COMPLETE (SERVICE)	(TRV530)
57	A-7074-644-A	FU-150 (NF) BOARD, COMPLETE (TRV330)	
57	A-7074-672-A	FU-154 (NF) BOARD, COMPLETE (TRV530)	
57	A-7074-687-A	FU-150 (N) BOARD, COMPLETE (TRV230)	
58	3-065-397-01	HOLDER, MS	
59	1-680-134-11	FP-274 FLEXIBLE BOARD (TRV330/TRV530)	
60	3-948-339-61	TAPPING	
61	A-7074-650-A	FP-272 BOARD, COMPLETE	
62	1-680-121-11	FP-266 FLEXIBLE BOARD	
63	A-7074-648-A	FP-270 BOARD, COMPLETE	
64	A-7074-649-A	FP-271 BOARD, COMPLETE (TRV330/TRV530)	
65	4-974-725-01	SCREW (M1.7X2.5), P	
66	A-7074-647-A	PC-082 BOARD, COMPLETE (TRV330/TRV530)	
67	1-500-226-11	BEAD, FERRITE (TRV330/TRV530)	
68	3-066-169-01	SHEET, MD	
* 69	X-3951-170-1	SHIELD ASSY, DD	
70	3-941-343-21	TAPE (A)	
71	3-066-759-01	SHEET, VC	
72	3-066-707-01	SHEET (T), ELECTROSTATIC (TRV530)	
73	3-065-662-01	LABEL, LS CAUTION	
74	3-065-567-01	TAPPING (M1.7), P	
CN910	1-815-123-11	CONNECTOR, MEMORY STICK	(TRV330/TRV530)

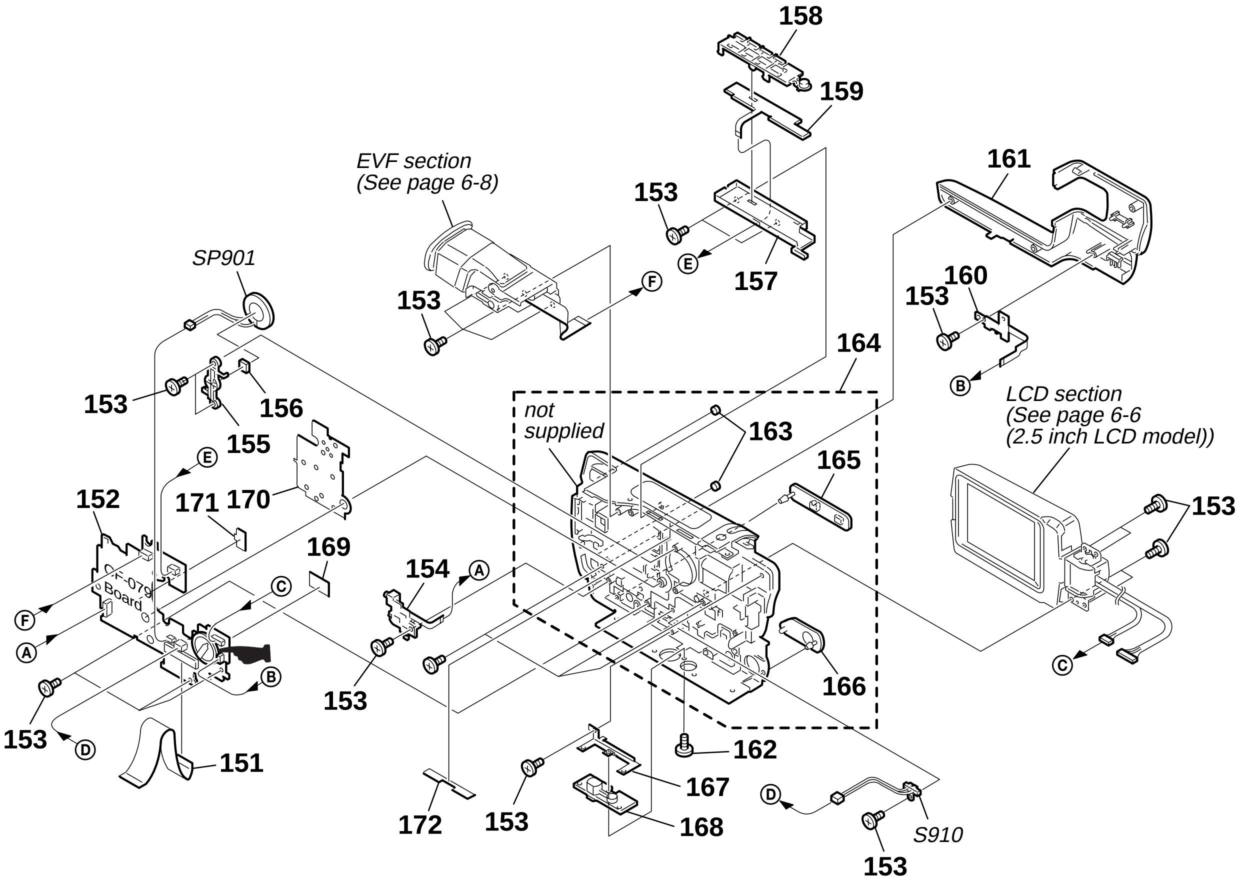
6-1-3. CABINET (L) SECTION-2


107
110
103
112
BT901
103
104
103
109
108
102
106
A
not supplied
105
not supplied
101
111
103
A

Ref. No.	Part No.	Description	Remarks
101	X-3951-159-1	CABINET (L) ASSY	
102	3-052-815-01	BELT (ES), GRIP	
103	3-067-347-01	MI SCREW M2 (H)	
104	3-065-308-01	LABEL (L)	
105	3-978-765-01	SLIDER, G LOCK	
106	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	
107	1-476-415-11	SWITCH BLOCK, CONTROL (SS-1380) (TRV330/TRV530)	
107	1-476-415-21	SWITCH BLOCK, CONTROL (SS-1380)(TRV230)	

Ref. No.	Part No.	Description	Remarks
108	X-3951-158-1	FRAME ASSY, CS	
* 109	3-065-324-01	SHEET METAL (LOWER), STRAP	
110	X-3951-157-1	PANEL ASSY, BATTERY (TRV230/TRV330:US,CND,E,HK,KR,JE/TRV530)	
110	X-3951-472-1	PANEL (B) ASSY, BATTERY (TRV330:BR)	
111	3-065-567-01	TAPPING (M1.7)	
112	4-974-725-01	SCREW (M1.7X2.5), P	
BT901	1-694-772-11	TERMINAL BOARD, BATTERY	

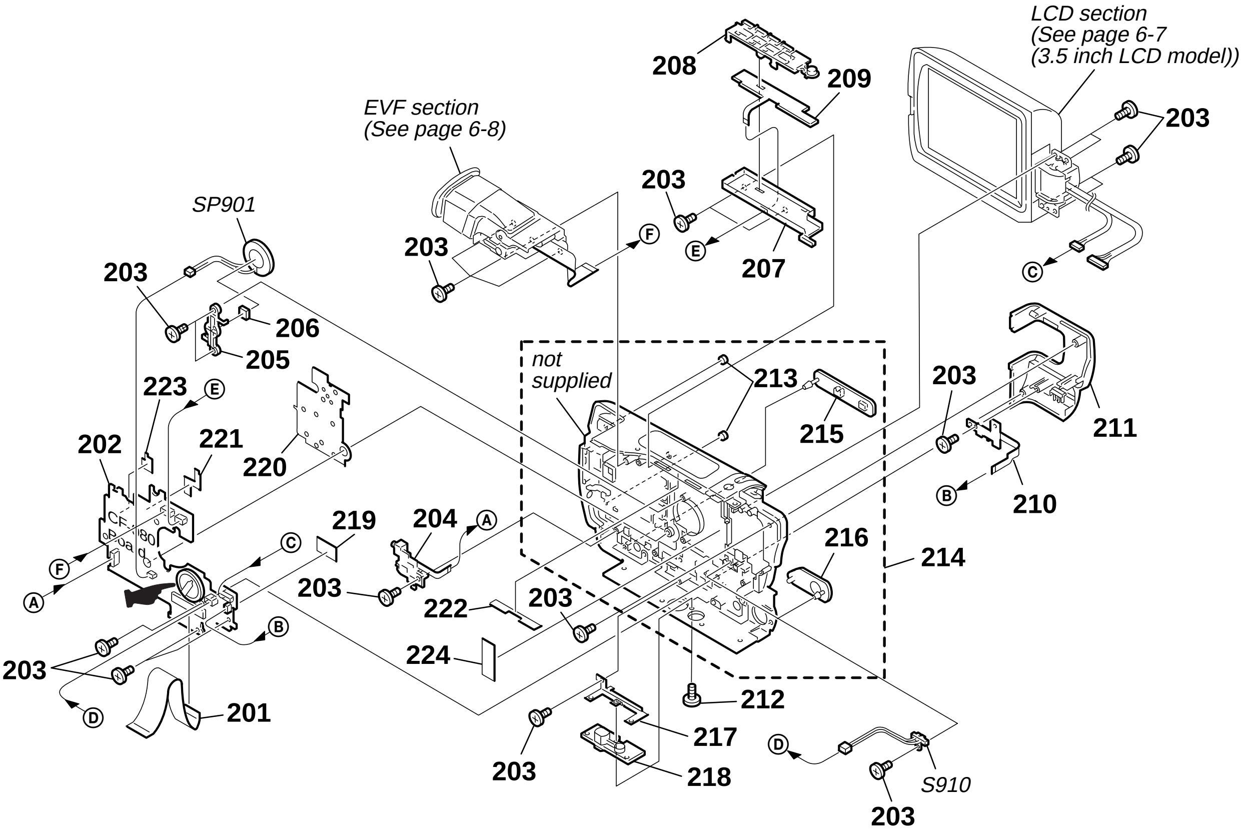
6-1-4. CABINET (R) SECTION (2.5 INCH LCD MODEL)(TRV230/TRV330)


158
159
EVF section
(See page 6-8)
161
153
SP901
153
F
E
157
160
153
164
153
156
155
B
LCD section
(See page 6-6
(2.5 inch LCD model))
not
supplied
163
E
165
152
171
170
169
153
154
A
CF-079
Board
C
F
A
153
B
153
166
153
D
151
162
167
D
172
153
168
S910
153
C

☛ : BT101 (Lithium battary) CF-079 board on the mount position. (See page 4-67)

Ref. No.	Part No.	Description	Remarks
151	1-791-948-11	CABLE, FLEXIBLE FLAT (FFC-001)	
152	A-7074-675-A	CF-079 (SBF) BOARD, COMPLETE (TRV330)	
152	A-7074-686-A	CF-079 (SB) BOARD, COMPLETE (TRV230)	
153	3-948-339-61	TAPPING	
154	1-476-416-11	SWITCH BLOCK, CONTROL (SE-1380)	
* 155	3-065-398-01	RETAINER, SPEAKER	
* 156	3-058-658-01	SPACER (101), SPEAKER	
* 157	3-065-385-01	HOLDER, VTR	
158	X-3951-173-1	BUTTON ASSY, VTR	
159	A-7074-652-A	FP-275 BOARD, COMPLETE	
160	A-7074-653-A	FP-282 BOARD, COMPLETE	
161	X-3951-174-1	COVER (140) ASSY, HINGE	
162	3-067-347-01	MI SCREW M2 (H)	
163	3-969-387-01	FOOT, RUBBER	
164	X-3951-171-1	CABINET R (140) ASSY(TRV330)	
164	X-3951-172-1	CABINET R (138) ASSY(TRV230)	
165	3-065-353-01	COVER (B), JACK (TRV330)	
165	3-065-353-11	COVER (B), JACK (TRV230)	
166	3-065-352-01	COVER (F), JACK	
167	3-065-386-01	RETAINER, TRIPOD	
168	3-065-373-01	SCREW (Y), TRIPOD	
* 169	3-065-521-01	SHEET, MUFFLE	
170	3-066-939-01	SHEET, CF ELECTROSTATIC	
171	3-066-940-01	SHEET (2), CF ELECTROSTATIC	
172	3-066-943-01	SHEET (R), B	
SP901	1-529-590-11	SPEAKER (2.0CM)	
S910	1-771-848-11	SWITCH, PUSH	

6-1-5. CABINET (R) SECTION (3.5 INCH LCD MODEL)(TRV530)


LCD section
(See page 6-7
(3.5 inch LCD model))
EVF section
(See page 6-8)
SP901
not supplied
S910
201
202
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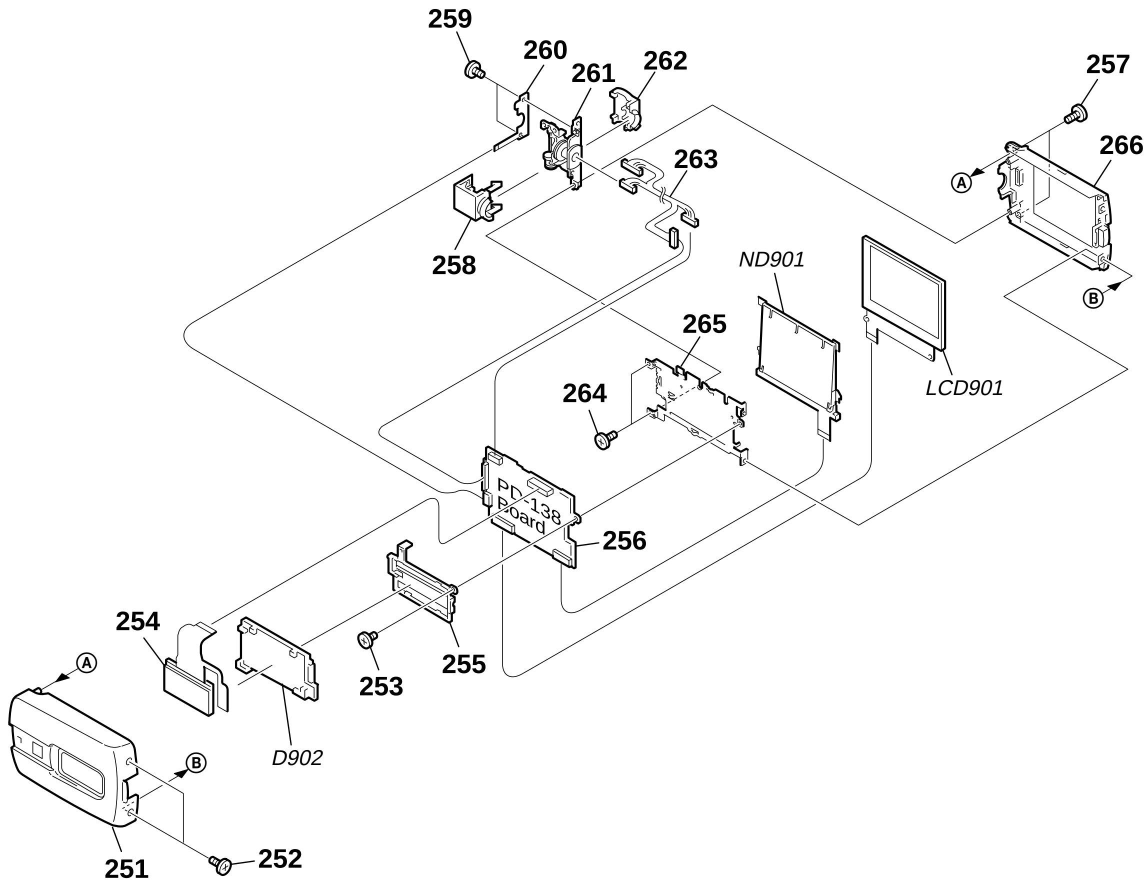
A
B
C
D
E
F
CF-080 board

☛ : BT101 (Lithium battary) CF-080 board on the mount position. (See page 4-71)

Ref. No.	Part No.	Description	Remarks
201	1-791-948-11	CABLE, FLEXIBLE FLAT (FFC-001)	
202	A-7074-677-A	CF-080 (SBF) BOARD, COMPLETE	
203	3-948-339-61	TAPPING	
204	1-476-416-11	SWITCH BLOCK, CONTROL (SE-1380)	
205	3-065-398-01	RETAINER, SPEAKER	
206	3-058-658-01	SPACER (101), SPEAKER	
207	3-065-385-01	HOLDER, VTR	
208	X-3951-173-1	BUTTON ASSY, VTR	
209	A-7074-652-A	FP-275 BOARD, COMPLETE	
210	A-7074-653-A	FP-282 BOARD, COMPLETE	
211	X-3951-176-1	COVER (148) ASSY, HINGE	
212	3-067-347-01	MI SCREW M2 (H)	
213	3-969-387-01	FOOT, RUBBER	
214	X-3951-175-1	CABINET R (148) ASSY	
215	3-065-353-01	COVER (B), JACK	
216	3-065-352-01	COVER (F), JACK	
217	3-065-386-01	RETAINER, TRIPOD	
218	3-065-373-01	SCREW (Y), TRIPOD	
219	3-065-521-01	SHEET, MUFFLE	
220	3-066-939-01	SHEET, CF ELECTROSTATIC	
221	3-066-941-01	SHEET (3), CF ELECTROSTATIC	
222	3-066-943-01	SHEET (R), B	
223	3-067-601-01	CF ELECTROSTATIC SHEET (4)	
224	3-941-343-21	TAPE (A)	
SP901	1-529-590-11	SPEAKER (2.0CM)	
S910	1-771-848-11	SWITCH, PUSH	

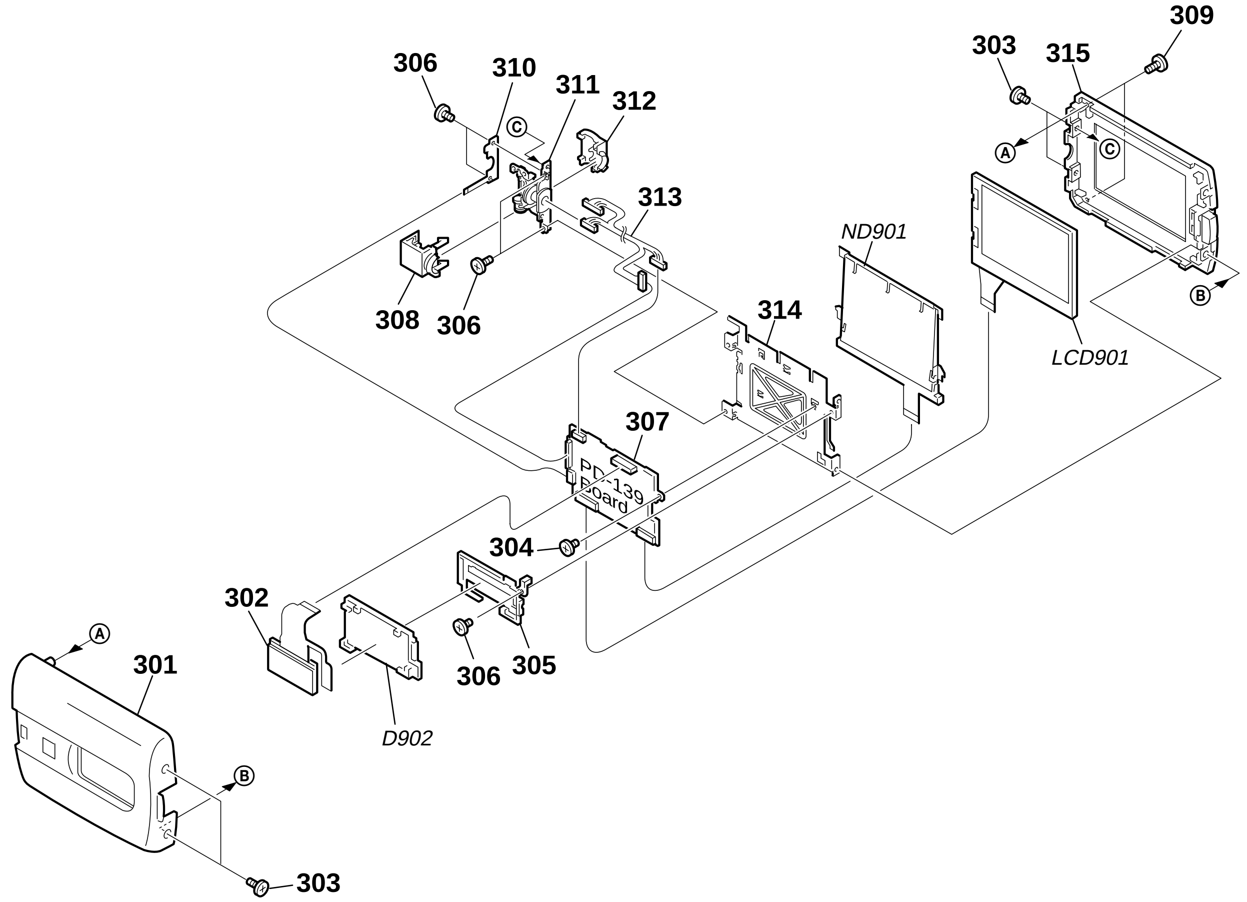
6-1-6. LCD SECTION (2.5 INCH LCD MODEL)(TRV230/TRV330)



Ref. No.	Part No.	Description	Remarks
251	3-065-364-01	CABINET C (2), P	
252	3-067-347-01	MI SCREW M2 (H)	
253	3-989-735-51	SCREW (M1.7), LOCK ACE, P2	
254	A-7096-434-A	INDICATION LCD BLOCK ASSY (SERVICE)	
255	3-065-368-01	HOLDER (2), LCD	
256	A-7074-646-A	PD-138 (XS6) BOARD, COMPLETE	
257	3-065-567-01	TAPPING (M1.7)	
258	3-065-395-01	COVER C (2.5), HINGE	
259	4-974-725-01	SCREW (M1.7X2.5), P	
260	A-7074-654-A	FP-283 BOARD, COMPLETE	
261	X-3951-181-1	HINGE ASSY	
262	3-065-394-01	COVER (M), HINGE	
263	1-960-973-21	HARNESS (VP-076)	
264	3-318-203-11	SCREW (B1.7X6), TAPPING	
265	3-065-367-01	FRAME (2), P	
266	X-3951-177-1	CABINET M (2) ASSY, P	
⚠ND901	1-518-725-21	TUBE, FLUORESCENT,COLD CATHODE	
⚠D902	1-518-721-11	LIGHT, BACK	
LCD901	1-803-852-21	INDICATOR MODULE LIQUID CRYST	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

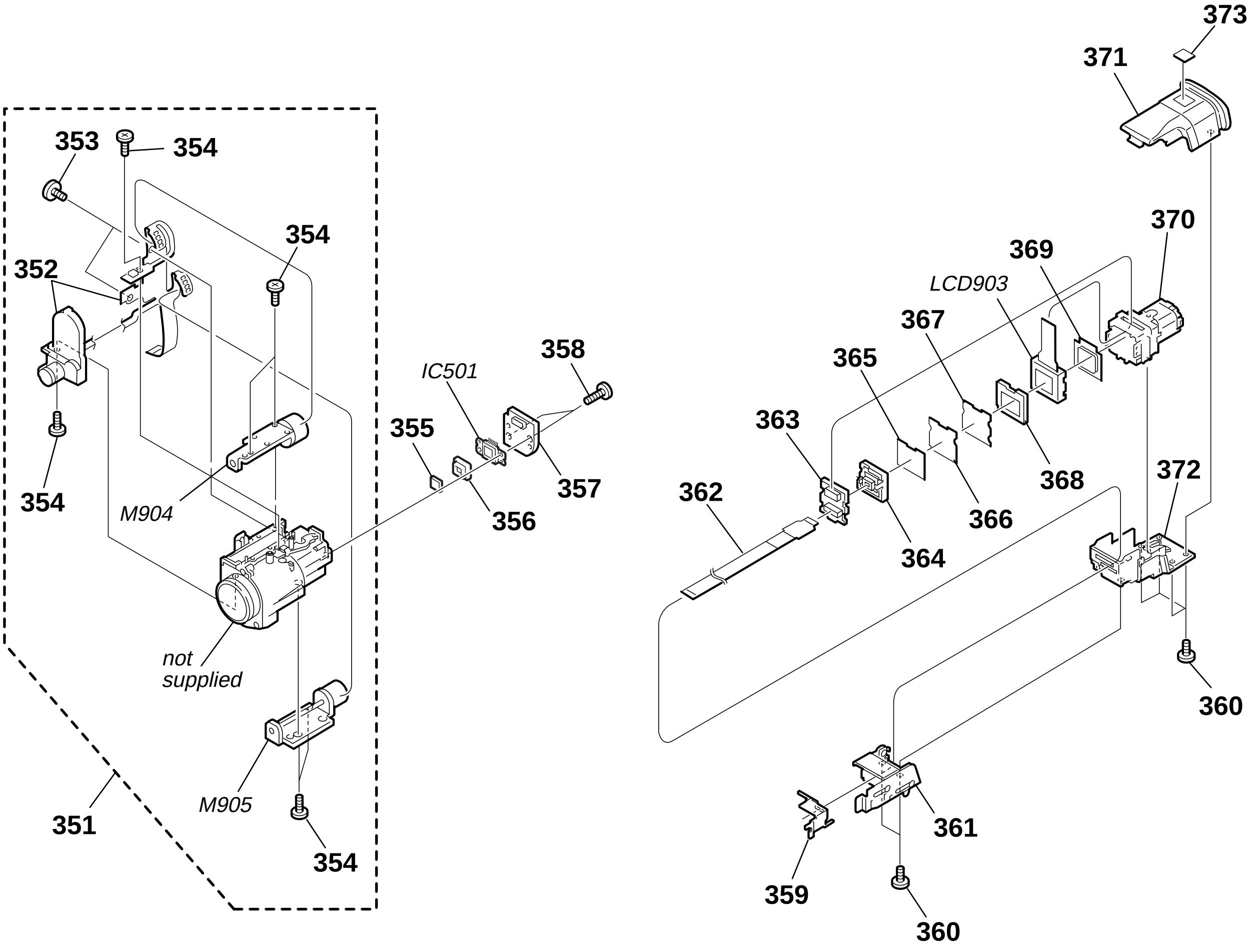
6-1-7. LCD SECTION (3.5 INCH LCD MODEL)(TRV530)



Ref. No.	Part No.	Description	Remarks
301	X-3951-180-1	CABINET C (3) ASSY, P	
302	A-7096-435-A	INDICATION LCD BLOCK ASSY (SERVICE)	
303	3-067-347-01	MI SCREW M2 (H)	
304	3-989-735-61	SCREW (M1.7), LOCK ACE, P2	
* 305	3-065-392-01	HOLDER (3), LCD	
306	4-974-725-01	SCREW (M1.7X2.5), P	
307	A-7074-674-A	PD-139 (Z12) BOARD, COMPLETE	
308	3-065-396-01	COVER C (3), HINGE	
309	3-065-567-01	TAPPING (M1.7)	
310	A-7074-654-A	FP-283 BOARD, COMPLETE	
311	X-3951-181-1	HINGE ASSY	
312	3-065-394-01	COVER (M), HINGE	
313	1-960-973-21	HARNESS (VP-076)	
314	3-065-391-01	FRAME (3), P	
315	X-3951-179-1	CABINET M (3) ASSY, P	
⚠ ND901	1-517-855-31	TUBE, FLUORESCENT, COLD CATHODE	
⚠ D902	1-518-721-11	LIGHT, BACK	
LCD901	8-753-051-00	ACX310AK-J (SERVICE)	

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-8. LENS, EVF SECTION



373
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LCD903
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IC501
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368
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M904
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not supplied
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M905
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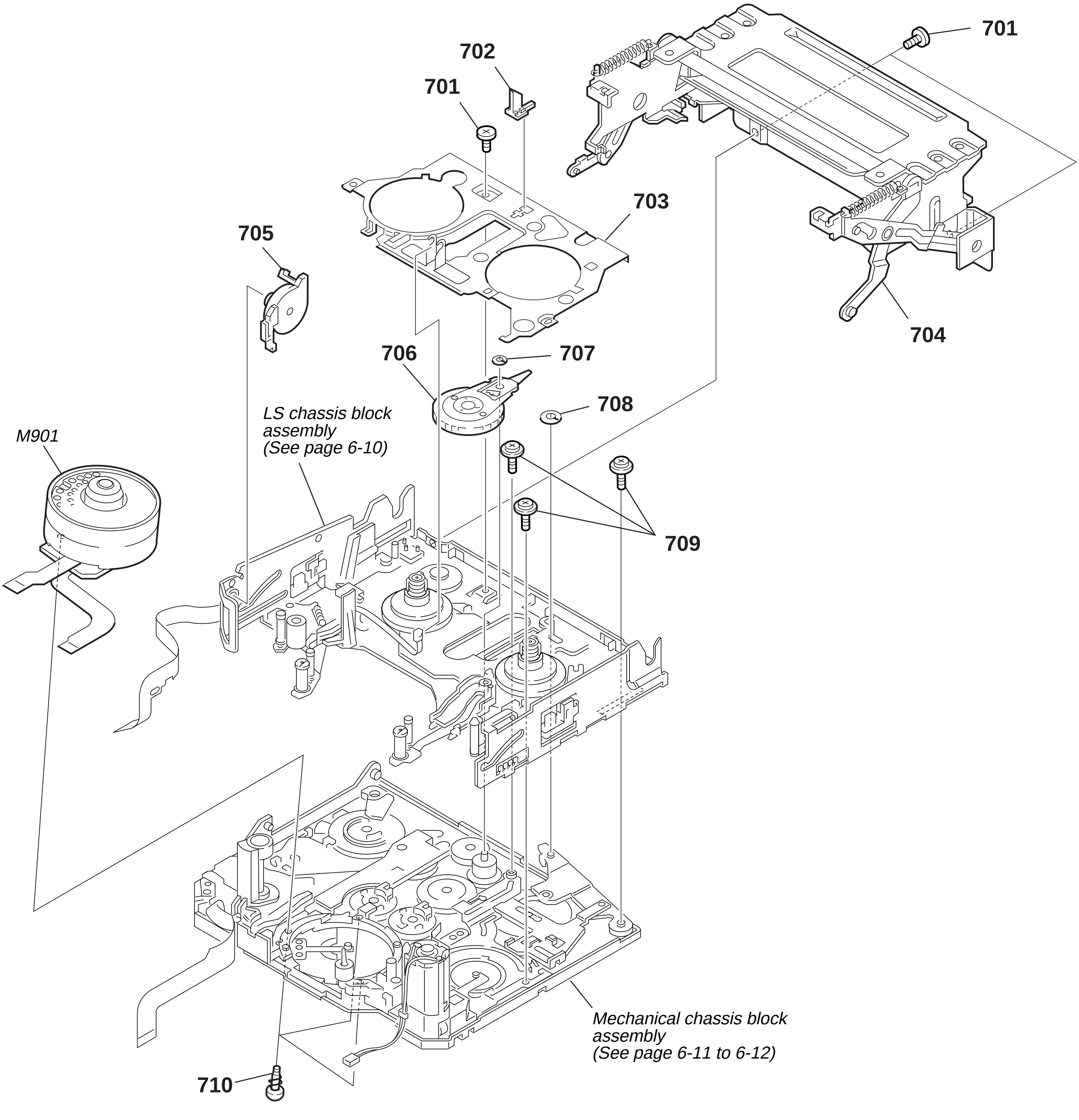
Be sure to read “Precautions upon replacing CCD imager” on page 4-10 when changing the CCD imager.

Ref. No.	Part No.	Description	Remarks
351	8-848-740-01	DEVICE, LENS LSV-700A	
352	X-3951-248-1	IRIS FLEXIBLE, ASSY	
353	3-065-022-01	TAPPING (B1.7X3.5), HEAD	
354	3-713-791-41	SCREW, TAPPING (M1.7X5), P2	
355	1-758-554-11	FILTER BLOCK, OPTICAL	
356	3-053-973-01	RUBBER (W), SEAL	
357	A-7074-642-A	CD-292 BOARD, COMPLETE (TRV230/TRV330)	
357	A-7074-670-A	CD-315 BOARD, COMPLETE (TRV530)	
358	3-318-203-11	SCREW (B1.7X6), TAPPING	
359	3-065-057-01	GUIDE (2), FLEXIBLE	
360	3-065-567-01	TAPPING (M1.7)	
361	X-3951-165-1	HINGE ASSY, VF	
362	1-680-123-11	FP-268 FLEXIBLE BOARD	
363	A-7074-676-A	LB-068 (SB) BOARD, COMPLETE	(TRV230/TRV330)
363	A-7074-678-A	LB-070 (SB) BOARD, COMPLETE (TRV530)	
364	3-065-058-01	GUIDE, LAMP	
365	3-065-059-01	ILLUMINATOR (1)	
366	3-065-061-01	SHEET (2) (138), PRISM	
367	3-065-060-01	SHEET (1) (138), PRISM	
368	3-065-062-01	CUSHION (138), LCD	
* 369	3-058-232-01	CUSHION (1) (97), LCD	
370	X-3951-168-1	LENS (B) ASSY, VF	
371	X-3951-163-1	CABINET (UPPER) ASSY, EVF	
372	X-3951-167-1	CABINET (LOWER) ASSY, EVF	
* 373	3-065-376-01	LABEL (138), B	
LCD903	8-753-028-49	LCX032AP-J (SERVICE)	
IC501	A-7031-213-A	CCD BLOCK ASSY (CCD IMAGER)	
M904	1-763-634-11	MOTOR STEPPING Z700 (ZOOM)	
M905	1-763-635-11	MOTOR STEPPING F700 (FOCUS)	

6-1-9. CASSETTE COMPARTMENT ASSY, DRUM ASSY


701
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701
703
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704
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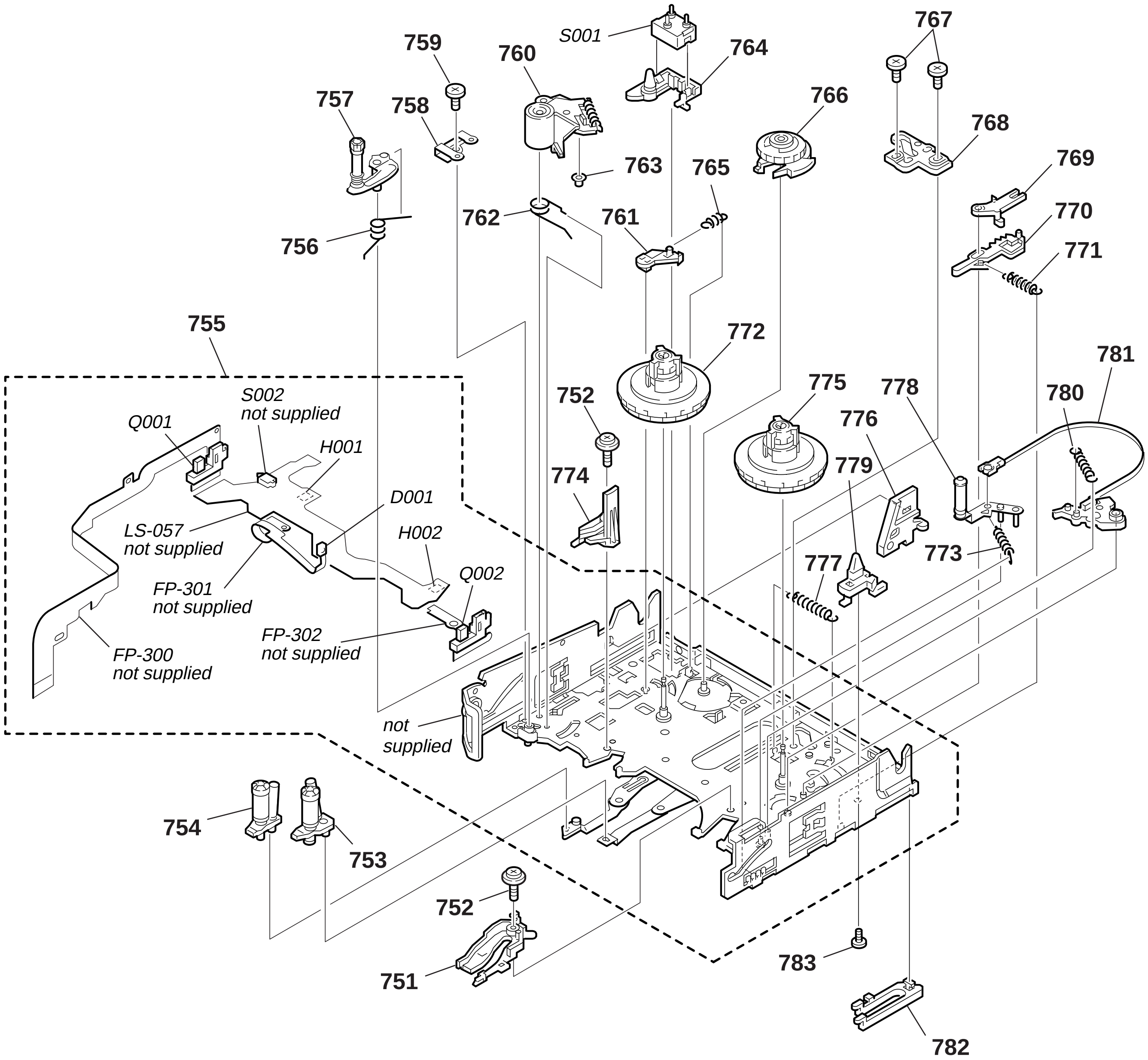
708
LS chassis block assembly (See page 6-10)
M901
709
Mechanical chassis block assembly (See page 6-11 to 6-12)
710

Ref. No.	Part No.	Description	Remarks
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
702	3-065-895-01	LEVER, REEL RELEASE	
703	3-065-896-01	PLATE, BLIND	
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY	
705	X-3951-302-1	DAMPER ASSY	
706	X-3951-297-1	GEAR ASSY, R DRIVE	

Ref. No.	Part No.	Description	Remarks
707	3-065-840-01	CUT (0.98X3X0.13), LUMILER (W)	
708	3-065-935-01	HLC CUT 1.8X4X0.5	
709	3-947-503-01	SCREW (M1.4)	
710	X-3951-299-1	SCREW ASSY, DRUM FITTING	
M901	A-7048-951-A	DRUM (DKH-04A-R)(SERVICE)	

6-1-10. LS CHASSIS BLOCK ASSEMBLY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S001
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S002
not supplied
Q001
776
H001
779
774
D001
LS-057
not supplied
H002
773
777
Q002
FP-301
not supplied
FP-302
not supplied
FP-300
not supplied
not
supplied
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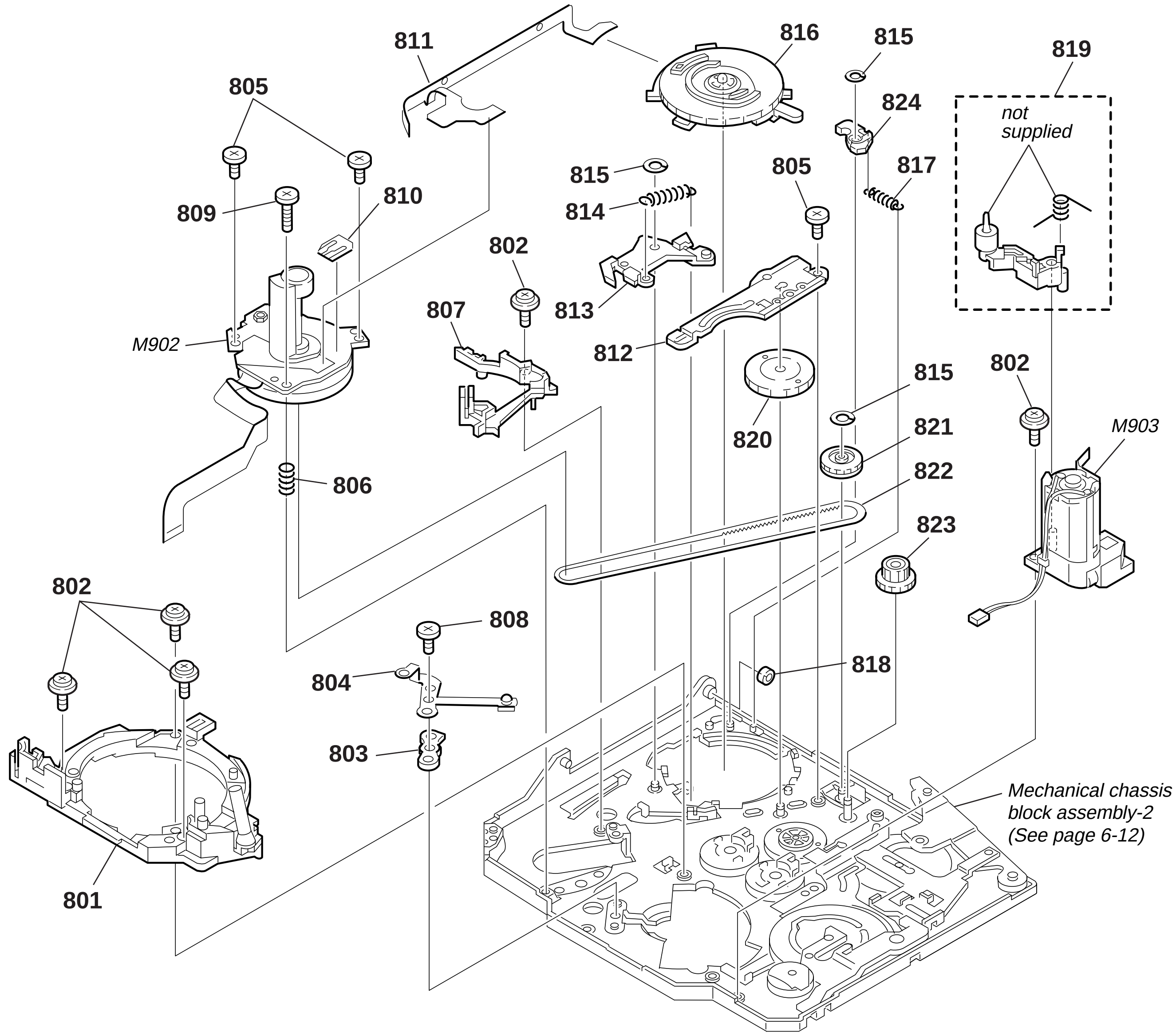
783
751
782

Ref. No.	Part No.	Description	Remarks
751	3-065-822-01	RAIL (S), GUIDE	
752	3-947-503-01	SCREW (M1.4)	
753	A-7096-416-A	BASE (S) BLOCK ASSY, GUIDE	
754	A-7096-415-A	BASE (T) BLOCK ASSY, GUIDE	
755	A-7096-426-A	CHASSIS ASSY, LS	
756	3-065-802-01	SPRING, TG7 ARM	
757	A-7096-414-A	ARM BLOCK ASSY, TRG7	
758	3-065-801-01	RETAINER, TG7	
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
760	X-3951-303-1	ARM ASSY, PINCH	
761	3-065-823-01	ARM, T RATCHET	
762	3-065-794-01	ROAD (SPR), PINCH ARM	
763	3-065-792-01	ROLLER, P LIM ARM	
764	3-065-834-01	GUIDE (T), CASSETTE	
765	3-065-824-01	SPRING, T RATCHET	
766	A-7096-417-A	SOFT ASSY, T	
767	7-627-852-38	SCREW, PRECISION +P1.7X1.8 TYPE3	
768	3-065-832-01	PLATE, LS CAM	
769	3-065-828-01	ARM, S RATCHET	
770	3-065-829-01	PLATE, S RATCHET (RE)	
771	3-065-830-01	SPRING, S RATCHET	
772	X-3951-288-1	TABLE (T) ASSY, REEL	
773	3-065-819-01	SPRING, TG1 ARM	
774	3-065-821-01	RAIL (T), GUIDE	
775	X-3951-289-1	TABLE (S) ASSY, REEL	
776	3-065-833-01	GUIDE, LOCK	
777	3-065-831-01	PLATE (SPR), RE RETURN	
778	X-3951-304-1	ARM ASSY, TG1	
779	3-065-835-01	GUIDE (S), CASSETTE	
780	3-065-820-01	SPRING, RVS ARM	
781	X-3951-296-1	BAND ASSY, BT	
782	3-065-836-01	COVER, LS GREASE	
783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING	
S001	1-692-614-11	SWITCH, PUSH (3KEY) (REC PROOF)	
H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
D001	8-719-988-42	DIODE GL453 (TAPE LED)	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	

6-1-11. MECHANICAL CHASSIS BLOCK ASSEMBLY-1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not supplied
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M902
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M903
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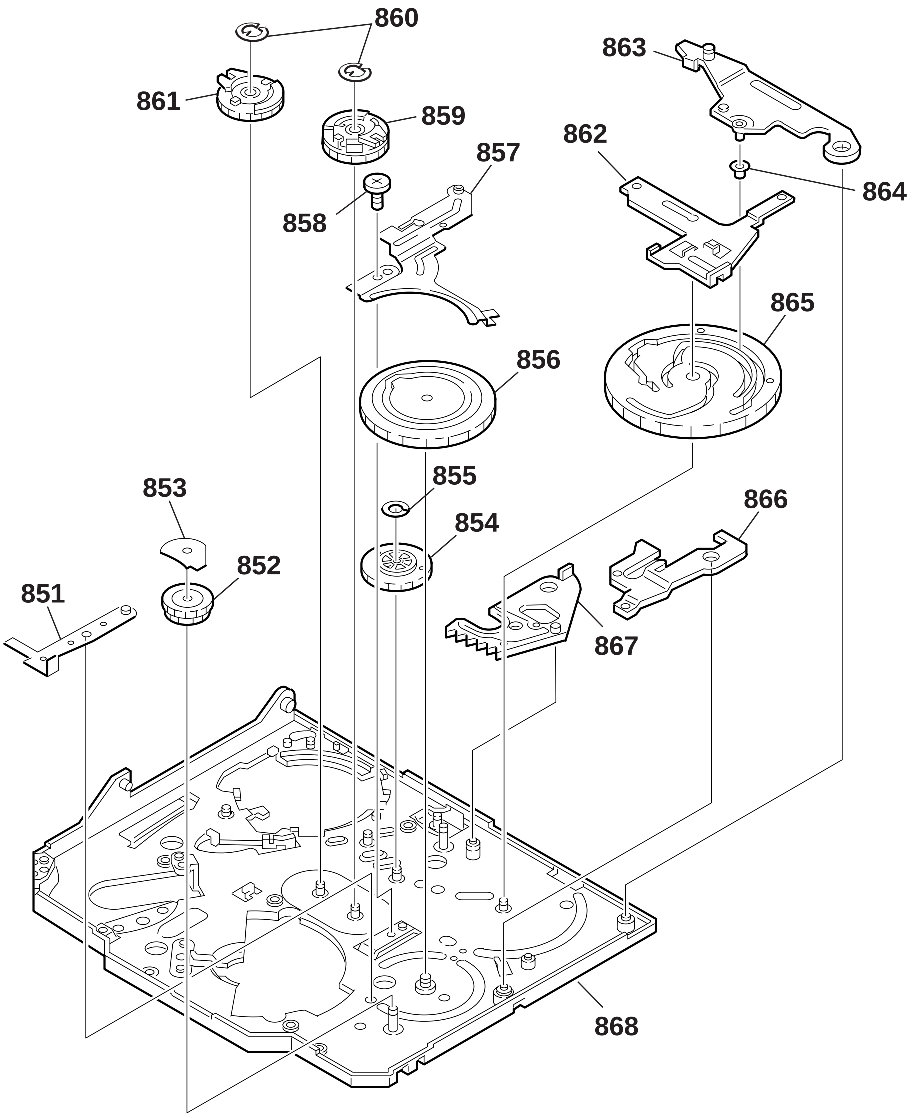
Mechanical chassis block assembly-2 (See page 6-12)
801

Ref. No.	Part No.	Description	Remarks
801	A-7096-422-A	BASE ASSY, DRUM	
802	3-947-503-01	SCREW (M1.4)	
803	3-065-928-01	SPACER, GROUND	
804	3-065-927-01	GROUND, DRUM	
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
806	3-067-154-01	SPRING, CAPSTAN	
807	3-065-931-01	RAIL (T2), GUIDE	
808	X-3947-398-1	SCREW ASSY, M1.7 PW	
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA	
810	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)	
811	1-680-434-11	FP-299 FLEXIBLE BOARD	
812	3-065-877-01	PLATE (T), GUIDE LOCK	
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE	
814	3-065-881-01	SPRING, P PRESSURE PLATE	
815	3-065-934-01	HLW CUT 0.98X3X0.25	
816	1-786-096-11	SWITCH, ROTALY	
817	3-065-898-01	SPRING, EJECT ARM	
818	3-065-870-01	ROLLER, LS GUIDE	
819	A-7096-421-A	ARM ASSY, HCL	
820	3-065-918-01	GEAR (2), CAM RELAY	
821	A-7096-419-A	GEAR ASSY, CHANGE	
822	3-065-902-01	BELT, TIMING	
823	3-065-905-01	GEAR, RELAY	
824	3-065-882-01	ARM, EJECT	
M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)	
M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)	

6-1-12. MECHANICAL CHASSIS BLOCK ASSEMBLY-2



Ref. No.	Part No.	Description	Remarks
851	3-065-920-01	ARM, HC DRIVE	
852	3-065-913-01	GEAR (4), LD	
853	3-065-914-01	SHEET, COVER	
854	3-065-917-01	GEAR (1), CAM RELAY	
855	3-065-934-01	HLW CUT 0.98X3X0.25	
856	3-065-915-01	GEAR (1), CAM	
857	3-065-878-01	PLATE (S), GUIDE LOCK	
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
859	A-7096-413-A	GEAR (S) ASSY, GUIDE	

Ref. No.	Part No.	Description	Remarks
860	7-624-101-04	STOP RING 1.2 (E TYPE)	
861	A-7096-412-A	GEAR (T) ASSY, GUIDE	
862	X-3951-307-1	PLATE ASSY, M SLIDE	
863	X-3951-305-1	ARM ASSY, LS	
864	3-065-901-01	ROLLER, LS ARM	
865	3-065-916-01	GEAR (2), CAM	
866	3-065-919-01	ARM, T1 LIMITTER	
867	X-3951-308-1	ARM ASSY, GL	
868	X-3951-300-1	CHASSIS ASSY, MECHANICAL	

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...
- Abbreviation
  CND : Canadian model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  BR : Brazilian model
  AR : Argentina model

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-7074-642-A	CD-292 BOARD, COMPLETE (TRV230/TRV330)			
		**			
	A-7074-670-A	CD-315 BOARD, COMPLETE (TRV530)			
		******************************			
					(Ref.No.;10000Series)
		(IC501 is not included in this COMPLETE board.)			
		< CAPACITOR >			
C502	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C507	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C509	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C511	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
		< CONNECTOR >			
CN501	1-766-346-21	CONNECTOR, FFC/FPC 16P			
CN501	1-766-677-21	CONNECTOR, FFC/FPC 16P			
CN501	1-766-346-21	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D001	8-719-073-01	DIODE	MA111-(K8).S0		
D001	8-719-988-61	DIODE	1SS355TE-17		
		< FERRITE BEAD >			
* FB5501	1-500-282-11	FERRITE	0UH		
FB5502	1-414-445-11	FERRITE	0UH		
		< IC >			
IC501	A-7031-213-A	CCD BLOCK ASSY (CCD IMAGER)			
		< COIL >			
L502	1-469-528-91	INDUCTOR	100uH		
		< TRANSISTOR >			
Q501	8-729-117-73	TRANSISTOR	2SC4178-F13F14-T1		
		< RESISTOR >			
R501	1-216-806-11	RES-CHIP	56	5%	1/16W
R503	1-216-864-91	SHORT	0		
R504	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R505	1-216-857-11	METAL CHIP	1M	5%	1/16W
R506	1-216-845-11	METAL CHIP	100K	5%	1/16W

Be sure to read "Precautions upon replacing CCD imager" on page 4-10 when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
	A-7074-675-A	CF-079 (SBF) BOARD, COMPLETE (TRV330)			
		*************************************			
	A-7074-677-A	CF-080 (SBF) BOARD, COMPLETE (TRV530)			
		*************************************			
	A-7074-686-A	CF-079 (SB) BOARD, COMPLETE (TRV230)			
		************************************			
					(Ref.No.;1000Series)
		< BATTERY >			
BT101	1-756-141-11	BATTERY, MANGANESE LITHIUM			
		< CAPACITOR >			
C101	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C201	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C202	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C207	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C208	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C209	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C210	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C212	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C213	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C214	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C215	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C216	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C217	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C218	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C219	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C220	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C221	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
		< CONNECTOR >			
CN101	1-794-057-21	PIN, CONNECTOR (PC BOARD) 2P			
CN102	1-785-760-11	CONNECTOR, FFC/FPC (ZIF) 45P			
CN103	1-794-058-21	PIN, CONNECTOR (PC BOARD) 6P			
CN104	1-779-328-21	CONNECTOR, FFC/FPC 8P			
* CN105	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
CN106	1-779-327-11	CONNECTOR, FFC/FPC 6P			
CN107	1-784-320-11	CONNECTOR, FFC/FPC 6P			
CN201	1-779-334-11	CONNECTOR, FFC/FPC 20P			

CF-079 CF-080

Ref. No.	Part No.	Description				Remarks
		< DIODE >				
D101	8-719-062-16	DIODE 01ZA8.2(TPL3)				
D102	8-719-062-16	DIODE 01ZA8.2(TPL3)				
D103	8-719-066-44	DIODE CL-270HR-C-TS (TRV330/TRV530)				
D104	8-719-073-01	DIODE MA111-(K8).S0				
D105	8-719-056-85	DIODE UDZS-TE17-8.2B				
D106	8-719-062-16	DIODE 01ZA8.2(TPL3)				
D107	8-719-062-16	DIODE 01ZA8.2(TPL3)				
D108	8-719-062-16	DIODE 01ZA8.2(TPL3)				
D109	8-719-056-85	DIODE UDZS-TE17-8.2B				
D202	8-713-102-80	DIODE 1T369-01-T8A				
		< FERRITE BEAD >				
FB201	1-414-760-21	FERRITE	0UH			
FB201	1-414-760-21	FERRITE	0UH			
FB201	1-500-329-21	FERRITE	0UH			
FB202	1-414-760-21	FERRITE	0UH			
FB202	1-414-760-21	FERRITE	0UH			
FB202	1-500-329-21	FERRITE	0UH			
		< IC >				
IC201	8-752-100-84	IC CXA3579R-T4				
IC202	8-752-405-57	IC CXD3501AR-T4				
		< COIL >				
L201	1-469-525-91	INDUCTOR	10uH			
L202	1-412-949-21	INDUCTOR	6.8uH			
		< TRANSISTOR >				
Q101	8-729-230-63	TRANSISTOR	2SC4116YG-TE85L			
Q102	8-729-230-72	TRANSISTOR	2SA1362-YG-EL			
Q103	8-729-042-29	TRANSISTOR	RN1104F(TPL3)			(TRV330/TRV530)
		< RESISTOR >				
R101	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R102	1-216-810-11	METAL CHIP	120	5%	1/16W	(TRV330/TRV530)
R103	1-216-813-11	METAL CHIP	220	5%	1/16W	
R105	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R106	1-216-807-11	METAL CHIP	68	5%	1/16W	
R108	1-216-815-11	METAL CHIP	330	5%	1/16W	
R109	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R110	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	(TRV330/TRV530)
R111	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R112	1-216-295-11	SHORT	0			
R113	1-216-814-11	METAL CHIP	270	5%	1/16W	
R114	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R115	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	(TRV330/TRV530)
R116	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R117	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R118	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV330/TRV530)
R119	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R120	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R121	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	(TRV330/TRV530)
R122	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R123	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R124	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	(TRV330/TRV530)
R125	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R126	1-216-838-11	METAL CHIP	27K	5%	1/16W	(TRV330/TRV530)
R127	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R128	1-216-841-11	METAL CHIP	47K	5%	1/16W	(TRV230)
R129	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R130	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R131	1-216-803-11	METAL CHIP	33	5%	1/16W	
R203	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R205	1-218-881-11	METAL CHIP	27K	0.5%	1/16W	
R209	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R210	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R211	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R212	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R213	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R214	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R215	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R216	1-216-816-11	METAL CHIP	390	5%	1/16W	
R217	1-216-816-11	METAL CHIP	390	5%	1/16W	
R218	1-216-816-11	METAL CHIP	390	5%	1/16W	
R219	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R220	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R221	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R222	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R226	1-216-864-91	SHORT	0			
R227	1-216-864-91	SHORT	0			
R228	1-216-864-91	SHORT	0			
R229	1-216-864-91	SHORT	0			
R230	1-216-864-91	SHORT	0			
R231	1-216-864-91	SHORT	0			
R232	1-216-864-91	SHORT	0			
		< SWITCH >				
S101	1-771-138-82	SWITCH, KEY BOARD (RESET)				
S102	1-771-138-82	SWITCH, KEY BOARD (MENU)				
S103	1-771-138-82	SWITCH, KEY BOARD (MS +)(TRV330/TRV530)				
S104	1-771-138-82	SWITCH, KEY BOARD (MS -)(TRV330/TRV530)				
S105	1-771-138-82	SWITCH, KEY BOARD (END SEARCH)				
S106	1-771-138-82	SWITCH, KEY BOARD (MS INDEX)				(TRV330/TRV530)
S107	1-771-138-82	SWITCH, KEY BOARD (DISPLAY)				
S108	1-771-138-82	SWITCH, KEY BOARD (TITLE)				
S109	1-771-138-82	SWITCH, KEY BOARD (MS DELETE)				(TRV330/TRV530)
S110	1-771-138-82	SWITCH, KEY BOARD (PB ZOOM)				
S111	1-771-138-82	SWITCH, KEY BOARD (VOLUME +)				
S112	1-771-138-82	SWITCH, KEY BOARD (MS PLAY)				(TRV330/TRV530)
S113	1-771-138-82	SWITCH, KEY BOARD (VOLUME -)				
S114	1-771-138-82	SWITCH, KEY BOARD (MEMORY MIX)				(TRV330/TRV530)
S115	1-771-138-82	SWITCH, KEY BOARD (BACK LIGHT)				
S116	1-771-138-82	SWITCH, KEY BOARD (EDIT SEARCH -)				
S117	1-771-138-82	SWITCH, KEY BOARD (EDIT SEARCH +)				
S118	1-771-138-82	SWITCH, KEY BOARD (FADER)				

Ref. No.	Part No.	Description	Remarks
	A-7074-648-A	FP-270 BOARD, COMPLETE ***********************	(Ref.No.;30000Series)
		< DIODE >	
D101	8-719-056-85	DIODE UDZS-TE17-8.2B	
D102	8-719-056-85	DIODE UDZS-TE17-8.2B	
		< JACK >	
J101	1-770-860-11	CONNECTOR, S TERMINAL (S VIDEO)	
J102	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO)	
		< RESISTOR >	
R101	1-216-864-91	SHORT 0	
R102	1-216-864-91	SHORT 0	
R104	1-216-864-91	SHORT 0	
R105	1-216-864-91	SHORT 0	
R107	1-216-864-91	SHORT 0	
R108	1-216-864-91	SHORT 0	
R109	1-216-864-91	SHORT 0	
R110	1-107-826-11	CERAMIC CHIP 0.1UF 10% 16V	(Note)
R111	1-107-826-11	CERAMIC CHIP 0.1UF 10% 16V	(Note)
		< VARISTOR >	
VDR101	1-803-974-21	VARISTOR, CHIP	
VDR102	1-803-974-21	VARISTOR, CHIP	
VDR103	1-803-974-21	VARISTOR, CHIP	
VDR104	1-803-974-21	VARISTOR, CHIP	
VDR105	1-803-974-21	VARISTOR, CHIP	
	A-7074-649-A	FP-271 BOARD, COMPLETE (TRV330/TRV530) **************************************	(Ref.No.;30000Series)
		< CAPACITOR >	
C201	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	(TRV330/TRV530)
		< CONNECTOR >	
CN201	1-794-962-11	CONNECTOR, SQUARE TYPE(USB 5P)	(DIGITAL I/O (USB))(TRV330/TRV530)
		< DIODE >	
D201	8-719-073-01	DIODE MA111-(K8).S0 (TRV330/TRV530)	
		< LINE FILTER >	
LF201	1-419-100-21	COIL, COMMON-MODE CHOKE	(TRV330/TRV530)
LF202	1-419-100-21	COIL, COMMON-MODE CHOKE	(TRV330/TRV530)

Ref. No.	Part No.	Description	Remarks
	A-7074-650-A	FP-272 BOARD, COMPLETE ***********************	(Ref.No.;30000Series)
		< CONNECTOR >	
CN202	1-779-369-11	CONNECTOR, SQUARE TYPE(INDI)4P	(DV IN/OUT)
		< DIODE >	
D202	8-719-064-61	DIODE 01BZA8.2(TE85L)	
		< JACK >	
J201	1-793-995-11	JACK, SUPER SMALL TYPE (LANC)	
		< RESISTOR >	
R204	1-216-817-11	METAL CHIP 470 5% 1/16W	
R205	1-216-864-91	SHORT 0	
R207	1-216-864-91	SHORT 0	
		< VARISTOR >	
VDR201	1-801-923-11	VARISTOR, CHIP	
	A-7074-651-A	FP-273 BOARD, COMPLETE ***********************	(Ref.No.;30000Series)
		< JACK >	
J301	1-695-514-21	JACK (SMALL TYPE) 1P (HEADPHONES)	
J302	1-691-737-11	JACK (SMALL TYPE) (MIC (PLUG IN POWER))	
		< PHOTO INTERRUPTER >	
PH301	8-749-014-54	DIODE RPI-222N1	
PH301	8-759-014-54	HIC CNA1312K01S0	
PH302	8-749-014-54	DIODE RPI-222N1	
PH302	8-759-014-54	HIC CNA1312K01S0	
	1-680-134-11	FP-274 FLEXIBLE BOARD (TRV330/TRV530) ************************************	(Ref.No.;30000Series)
	A-7074-652-A	FP-275 BOARD, COMPLETE ***********************	(Ref.No.;30000Series)
		< DIODE >	
D401	8-719-074-30	DIODE SML-310LTT86	
D402	8-719-064-61	DIODE 01BZA8.2(TE85L)	
		< RESISTOR >	
R403	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R404	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R405	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R406	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R407	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	

Note : Capacitor is mounted to the location where R110,R111 are printed.

Ref. No.	Part No.	Description			Remarks
R408	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R409	1-216-821-11	METAL CHIP	1K	5%	1/16W
R410	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
		< SWITCH >			
S401	1-771-138-82	SWITCH, KEY BOARD (STOP)			
S402	1-771-138-82	SWITCH, KEY BOARD (SUPER NIGHT SHOT)			
S403	1-771-138-82	SWITCH, KEY BOARD (FF)			
S404	1-771-138-82	SWITCH, KEY BOARD (PAUSE)			
S405	1-771-138-82	SWITCH, KEY BOARD (SUPER LASER LINK)			
S406	1-771-138-82	SWITCH, KEY BOARD (REC)			
S407	1-771-138-82	SWITCH, KEY BOARD (REW)			
S408	1-771-138-82	SWITCH, KEY BOARD (REC)			
S409	1-771-138-82	SWITCH, KEY BOARD (PLAY)			
	A-7074-653-A	FP-282 BOARD, COMPLETE **********************			(Ref.No.;30000Series)
		< SWITCH >			
S501	1-762-650-21	SWITCH, SLIDE (FOCUS AUTO/MANUAL)			
	A-7074-654-A	FP-283 BOARD, COMPLETE **********************			(Ref.No.;30000Series)
		< SWITCH >			
S601	1-771-483-81	SWITCH, PUSH (1 KEY)(PANEL REV)			
	A-7074-644-A	FU-150 (NF) BOARD, COMPLETE (TRV330) ***********************************			
	A-7074-672-A	FU-154 (NF) BOARD, COMPLETE (TRV530) ***********************************			
	A-7074-687-A	FU-150 (N) BOARD, COMPLETE (TRV230) **********************************			(Ref.No.;1000Series)
		< CAPACITOR >			
C401	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C402	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C403	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C404	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C405	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C406	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C409	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C410	1-109-982-11	CERAMIC CHIP	1uF	10%	10V (TRV330/TRV530)
		< CONNECTOR >			
* CN401	1-580-789-21	PIN, CONNECTOR (SMD) 6P			
CN402	1-750-076-21	CONNECTOR, FFC/FPC 12P			
CN403	1-691-520-11	CONNECTOR, BOARD TO BOARD 48P			
		< DIODE >			
D401	8-719-027-76	DIODE 1SS357-TPH3			
D402	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D404	8-719-056-85	DIODE UDZS-TE17-8.2B			
D405	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D406	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D407	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D408	8-719-027-76	DIODE 1SS357-TPH3			
		< FUSE >			
⚠F401	1-576-406-21	FUSE, MICRO (1608) (1.4A)			
⚠F402	1-576-406-21	FUSE, MICRO (1608) (1.4A)			
⚠F403	1-576-406-21	FUSE, MICRO (1608) (1.4A)			
⚠F404	1-576-406-21	FUSE, MICRO (1608) (1.4A)			
⚠F405	1-576-406-21	FUSE, MICRO (1608) (1.4A) (TRV330/TRV530)			
⚠F406	1-576-406-21	FUSE, MICRO (1608) (1.4A)			
		< COIL >			
L401	1-412-056-11	INDUCTOR	4.7uH		
		< TRANSISTOR >			
Q401	8-729-047-68	TRANSISTOR	SSM3K03FE(TPL3)		
Q402	8-729-051-49	TRANSISTOR	HAT1054R-EL		
Q403	8-729-804-41	TRANSISTOR	2SB1122-ST-TD		
Q404	8-729-042-29	TRANSISTOR	RN1104F(TPL3)		
Q405	8-729-042-29	TRANSISTOR	RN1104F(TPL3)		
Q407	8-729-042-56	TRANSISTOR	MGSF3455VT1 (TRV230)		
Q408	8-729-051-49	TRANSISTOR	HAT1054R-EL		(TRV330/TRV530)
Q409	8-729-023-89	TRANSISTOR	2SJ305(TE85L)		
Q410	8-729-037-61	TRANSISTOR	RN2104F(TPL3)		
Q411	8-729-037-61	TRANSISTOR	RN2104F(TPL3)		(TRV330/TRV530)
Q412	8-729-023-89	TRANSISTOR	2SJ305(TE85L)		(TRV330/TRV530)
		< RESISTOR >			
R401	1-216-821-11	METAL CHIP	1K	5%	1/16W
R402	1-216-295-11	SHORT	0		
R403	1-216-821-11	METAL CHIP	1K	5%	1/16W
R406	1-216-853-11	METAL CHIP	470K	5%	1/16W
R407	1-216-857-11	METAL CHIP	1M	5%	1/16W
R408	1-216-150-91	RES-CHIP	10	5%	1/8W
R409	1-216-821-11	METAL CHIP	1K	5%	1/16W
R410	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R420	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV330/TRV530)
R421	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV330/TRV530)
R422	1-216-857-11	METAL CHIP	1M	5%	1/16W
R423	1-216-809-11	METAL CHIP	100	5%	1/16W
R424	1-216-841-11	METAL CHIP	47K	5%	1/16W
R425	1-216-809-11	METAL CHIP	100	5%	1/16W (TRV330/TRV530)
R426	1-216-857-11	METAL CHIP	1M	5%	1/16W (TRV330/TRV530)
R427	1-216-841-11	METAL CHIP	47K	5%	1/16W (TRV330/TRV530)
R429	1-216-296-91	SHORT	0		
R430	1-216-296-91	SHORT	0		

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-7074-676-A	LB-068 (SB) BOARD, COMPLETE (TRV230/TRV330)			
		***************************************			
	A-7074-678-A	LB-070 (SB) BOARD, COMPLETE (TRV530)			
		************************************ (Ref.No.;1000Series)			
		< CAPACITOR >			
C702	1-164-505-11	CERAMIC CHIP	2.2uF		16V
		< CONNECTOR >			
CN701	1-779-334-11	CONNECTOR, FFC/FPC 20P			
CN702	1-573-356-21	CONNECTOR, FFC/FPC 16P			
CN702	1-691-354-21	CONNECTOR, FFC/FPC (ZIF) 16P			
CN702	1-750-340-21	CONNECTOR, FFC/EPC (ZIF) 16P			
		< DIODE >			
D701	8-719-082-33	DIODE NSCW100-T38			
D702	8-719-074-30	DIODE SML-310LTT86			
		< IC >			
IC701	8-759-581-11	IC NJM2125F(TE2)			
		< TRANSISTOR >			
Q701	8-759-054-48	TRANSISTOR	UP04601008S0		
Q702	8-729-054-45	TRANSISTOR	UP04312008S0		
		< RESISTOR >			
R701	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R702	1-218-901-11	METAL CHIP	180K	0.5%	1/16W
R703	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R704	1-211-985-11	METAL CHIP	47	0.5%	1/16W
R705	1-216-821-11	METAL CHIP	1K	5%	1/16W
R706	1-216-839-11	METAL CHIP	33K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
	A-7074-647-A	PC-082 BOARD, COMPLETE (TRV330/TRV530)			
		*************************************** (Ref.No.;20000Series)			
		< CAPACITOR >			
C1151	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1154	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1156	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1158	1-164-315-11	CERAMIC CHIP	470PF	2%	50V
C1160	1-164-315-11	CERAMIC CHIP	470PF	2%	50V
C1161	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1163	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1166	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1167	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1168	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1169	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1170	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1171	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1172	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1173	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1174	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1175	1-162-913-11	CERAMIC CHIP	8PF	0.50PF	50V
C1176	1-162-913-11	CERAMIC CHIP	8PF	0.50PF	50V
C1177	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1178	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1179	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1180	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1181	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1182	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1183	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1185	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1189	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1190	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1191	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1192	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1194	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1195	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1196	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1197	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1902	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1903	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1904	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1905	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1906	1-164-315-11	CERAMIC CHIP	470PF	2%	50V
C1907	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1908	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1909	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1910	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1911	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1912	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1914	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN1152	1-779-327-11	CONNECTOR, FFC/FPC 6P			
CN1153	1-573-352-11	CONNECTOR, FFC/FPC 12P			
CN1901	1-774-603-21	CONNECTOR, BOARD TO BOARD 100P			
		< DIODE >			
D1151	8-719-073-01	DIODE MA111-(K8).S0			
D1152	8-719-056-85	DIODE UDZS-TE17-8.2B			
		< FERRITE BEAD >			
FB1151	1-414-760-21	FERRITE	0UH		
FB1152	1-414-760-21	FERRITE	0UH		
FB1153	1-414-813-11	FERRITE	0UH		
FB1154	1-414-760-21	FERRITE	0UH		
FB1155	1-500-282-11	FERRITE	0UH		
FB1156	1-414-760-21	FERRITE	0UH		
FB1158	1-414-760-21	FERRITE	0UH		
FB1902	1-414-760-21	FERRITE	0UH		
FB1903	1-414-760-21	FERRITE	0UH		
		< IC >			
IC1151	8-759-271-88	IC TC7SHU04FU-TE85R			
IC1152	8-759-234-20	IC TC7S08F(TE85R)			
IC1153	8-759-665-38	IC MB81F161622C-80FN			
IC1154	8-759-714-41	IC MBM29LV400BC-90PFTN-S112-ER			
IC1155	8-759-668-50	IC HD6417197FL77			

Ref. No.	Part No.	Description			Remarks
IC1157	8-759-657-69	IC PDIUSBP11APW,118			
IC1158	8-759-525-53	IC RN5RZ31BA-TL			
IC1159	8-759-082-58	IC TC7W08FU(TE12R)			
IC1160	8-759-082-58	IC TC7W08FU(TE12R)			
IC1901	8-759-699-91	IC MB87J4421PFF-G-BND			
		< COIL >			
L1151	1-469-528-91	INDUCTOR	100uH		
		< TRANSISTOR >			
Q1153	8-729-042-29	TRANSISTOR	RN1104F(TPL3)		
Q1154	8-729-042-72	TRANSISTOR	RN1107F(TPL3)		
Q1155	8-729-037-53	TRANSISTOR	2SA1832F-Y/GR(TPL3)		
Q1156	8-729-037-61	TRANSISTOR	RN2104F(TPL3)		
Q1902	8-729-037-61	TRANSISTOR	RN2104F(TPL3)		
Q1903	8-729-042-29	TRANSISTOR	RN1104F(TPL3)		
		< RESISTOR >			
R1151	1-216-864-91	SHORT	0		
R1152	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1153	1-216-864-91	SHORT	0		
R1154	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1155	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1156	1-216-857-11	METAL CHIP	1M	5%	1/16W
R1157	1-216-864-91	SHORT	0		
R1158	1-216-864-91	SHORT	0		
R1159	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1160	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1161	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1163	1-216-805-11	METAL CHIP	47	5%	1/16W
R1165	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1166	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1167	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1168	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1169	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1170	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1171	1-216-809-11	METAL CHIP	100	5%	1/16W
R1172	1-216-809-11	METAL CHIP	100	5%	1/16W
R1173	1-216-809-11	METAL CHIP	100	5%	1/16W
R1174	1-216-864-91	SHORT	0		
R1176	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1177	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1178	1-211-978-11	METAL CHIP	24	0.5%	1/16W
R1179	1-211-978-11	METAL CHIP	24	0.5%	1/16W
R1180	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1181	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1182	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1185	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1186	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1187	1-216-864-91	SHORT	0		
R1188	1-216-864-91	SHORT	0		
R1189	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1190	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1191	1-216-864-91	SHORT	0		
R1192	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1193	1-216-847-11	METAL CHIP	150K	5%	1/16W
R1194	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1198	1-216-809-11	METAL CHIP	100	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R1203	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1205	1-216-809-11	METAL CHIP	100	5%	1/16W
R1207	1-216-853-11	METAL CHIP	470K	5%	1/16W
R1208	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1211	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1903	1-216-864-91	SHORT	0		
R1905	1-216-864-91	SHORT	0		
R1906	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1907	1-216-864-91	SHORT	0		
R1912	1-216-864-91	SHORT	0		
R1914	1-216-864-91	SHORT	0		
		< COMPOSITION CIRCUIT BLOCK >			
RB1151	1-234-377-21	RES, NETWORK 4.7KX4		(1005)	
RB1152	1-234-377-21	RES, NETWORK 4.7KX4		(1005)	
RB1154	1-234-381-21	RES, NETWORK 100KX4		(1005)	
RB1155	1-234-381-21	RES, NETWORK 100KX4		(1005)	
RB1156	1-234-381-21	RES, NETWORK 100KX4		(1005)	
		< VARISTOR >			
VDR111	1-801-862-11	VARISTOR, CHIP			
VDR112	1-801-862-11	VARISTOR, CHIP			
		< VIBRATOR >			
X1151	1-781-620-21	VIBRATOR, CERAMIC (48MHz)			
X1152	1-781-762-21	VIBRATOR, CRYSTAL (25.8048MHz)			

	A-7074-646-A	PD-138 (XS6) BOARD, COMPLETE			
					(TRV230/TRV330)
		***			
					(Ref.No.;20000Series)
		< CAPACITOR >			
C5501	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C5503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5504	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5505	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5508	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5509	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C5510	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5511	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C5512	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5513	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5514	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C5515	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C5516	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C5517	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5518	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5519	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5520	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C5521	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C5524	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C5527	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5528	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C5530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5531	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remarks
C5602	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C5604	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V
C5605	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5606	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
⚠C5607	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
C5704	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN5501	1-691-362-11	CONNECTOR, FFC/FPC (ZIF) 24P			
* CN5502	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN5604	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN5701	1-794-998-21	PIN, CONNECTOR 20P			
CN5703	1-766-336-21	CONNECTOR, FFC/FPC 6P			
CN5704	1-778-508-21	PIN, CONNECTOR (PC BOARD) 6P			
CN5705	1-779-335-21	CONNECTOR, FFC/FPC 22P			
		< DIODE >			
D5502	8-713-102-80	DIODE 1T369-01-T8A			
D5503	8-719-073-01	DIODE MA111-(K8).S0			
D5601	8-719-073-01	DIODE MA111-(K8).S0			
		< FERRITE BEAD >			
FB5502	1-414-760-21	FERRITE	0UH		
FB5503	1-414-760-21	FERRITE	0UH		
FB5504	1-414-760-21	FERRITE	0UH		
		< IC >			
IC5501	8-759-660-92	IC RB5P003AM1			
IC5502	8-759-714-77	IC LZ9FF474			
IC5601	8-759-564-49	IC TC7W53FU(TE12R)			
IC5602	8-759-075-70	IC TA75S393F-TE85R			
IC5701	8-759-573-02	IC BU9735K-E2			
		< COIL >			
L5501	1-469-525-91	INDUCTOR	10uH		
L5505	1-412-956-21	INDUCTOR	27uH		
L5601	1-419-387-21	INDUCTOR	100uH		
		< TRANSISTOR >			
Q5502	8-729-041-23	TRANSISTOR	MGSF1P02LT1		
Q5509	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q5510	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5511	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5601	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q5602	8-729-039-43	TRANSISTOR	FP216-TL		
Q5603	8-729-054-45	TRANSISTOR	UP04312008S0		
		< RESISTOR >			
R5501	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5503	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R5505	1-216-835-11	METAL CHIP	15K	5%	1/16W
R5506	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R5507	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5508	1-216-843-11	METAL CHIP	68K	5%	1/16W
R5509	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5510	1-216-843-11	METAL CHIP	68K	5%	1/16W
R5511	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5512	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R5513	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5515	1-216-864-91	SHORT	0		
R5516	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5521	1-216-864-91	SHORT	0		
R5523	1-216-809-11	METAL CHIP	100	5%	1/16W
R5524	1-216-809-11	METAL CHIP	100	5%	1/16W
R5525	1-216-809-11	METAL CHIP	100	5%	1/16W
R5551	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5553	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5557	1-216-864-91	SHORT	0		
R5562	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5563	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5564	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5565	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5569	1-216-848-11	METAL CHIP	180K	5%	1/16W
R5570	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5571	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5572	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5573	1-216-864-91	SHORT	0		
R5574	1-216-864-91	SHORT	0		
R5575	1-216-864-91	SHORT	0		
R5609	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5610	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5611	1-216-848-11	METAL CHIP	180K	5%	1/16W
R5612	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5613	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5614	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5616	1-216-809-11	METAL CHIP	100	5%	1/16W
R5617	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5618	1-216-817-11	METAL CHIP	470	5%	1/16W
R5712	1-216-855-11	METAL CHIP	680K	5%	1/16W
		< TRANSFORMER >			
⚠T5601	1-435-227-11	TRANSFORMER, INVERTER			

A-7074-674-A PD-139 (Z12) BOARD, COMPLETE (TRV530)
****
(Ref.No.;20000Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C5501	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C5503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5504	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5505	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5508	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5509	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C5510	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5511	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C5512	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5515	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C5516	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C5517	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5518	1-109-982-11	CERAMIC CHIP	1uF	10%	10V

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
C5519	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5532	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5533	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C5534	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5536	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5538	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5540	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5602	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C5604	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V
C5605	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5606	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
⚠C5607	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
C5704	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN5501	1-691-362-11	CONNECTOR, FFC/FPC (ZIF) 24P			
* CN5502	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN5604	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN5701	1-794-998-21	PIN, CONNECTOR 20P			
CN5703	1-766-336-21	CONNECTOR, FFC/FPC 6P			
CN5704	1-778-508-21	PIN, CONNECTOR (PC BOARD) 6P			
CN5705	1-779-335-21	CONNECTOR, FFC/FPC 22P			
		< DIODE >			
D5502	8-713-102-80	DIODE	1T369-01-T8A		
D5503	8-719-050-42	DIODE	RD3.3UM-T1B		
D5601	8-719-073-01	DIODE	MA111-(K8).S0		
		< FERRITE BEAD >			
FB5502	1-414-760-21	FERRITE	0UH		
FB5504	1-414-760-21	FERRITE	0UH		
		< IC >			
IC5501	8-752-100-84	IC	CXA3579R-T4		
IC5502	8-752-409-15	IC	CXD3516R-T4		
IC5601	8-759-564-49	IC	TC7W53FU(TE12R)		
IC5602	8-759-075-70	IC	TA75S393F-TE85R		
IC5701	8-759-573-02	IC	BU9735K-E2		
		< COIL >			
L5501	1-469-525-91	INDUCTOR	10uH		
L5505	1-412-949-21	INDUCTOR	6.8uH		
L5601	1-419-387-21	INDUCTOR	100uH		
		< TRANSISTOR >			
Q5503	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5504	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO		
Q5505	8-729-041-23	TRANSISTOR	NDS356AP		
Q5506	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q5508	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5601	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q5602	8-729-039-43	TRANSISTOR	FP216-TL		
Q5603	8-729-054-45	TRANSISTOR	UP04312008S0		
		< RESISTOR >			
R5501	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5503	1-218-893-11	METAL CHIP	82K	0.5%	1/16W
R5506	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R5507	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5508	1-216-843-11	METAL CHIP	68K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R5509	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5510	1-216-843-11	METAL CHIP	68K	5%	1/16W
R5511	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5512	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5523	1-216-809-11	METAL CHIP	100	5%	1/16W
R5524	1-216-809-11	METAL CHIP	100	5%	1/16W
R5525	1-216-809-11	METAL CHIP	100	5%	1/16W
R5551	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5553	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5557	1-216-864-91	SHORT	0		
R5571	1-216-809-11	METAL CHIP	100	5%	1/16W
R5572	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5573	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5574	1-218-917-11	RES-CHIP	820K	5%	1/16W
R5575	1-216-843-11	METAL CHIP	68K	5%	1/16W
R5576	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5577	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5579	1-216-847-11	METAL CHIP	150K	5%	1/16W
R5585	1-216-839-11	METAL CHIP	33K	5%	1/16W
R5586	1-216-839-11	METAL CHIP	33K	5%	1/16W
R5587	1-216-839-11	METAL CHIP	33K	5%	1/16W
R5588	1-216-848-11	METAL CHIP	180K	5%	1/16W
R5590	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5591	1-216-864-91	SHORT	0		
R5592	1-216-864-91	SHORT	0		
R5609	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5610	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5611	1-216-848-11	METAL CHIP	180K	5%	1/16W
R5612	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5613	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5614	1-216-835-11	METAL CHIP	15K	5%	1/16W
R5616	1-216-809-11	METAL CHIP	100	5%	1/16W
R5617	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5618	1-216-817-11	METAL CHIP	470	5%	1/16W
R5712	1-216-855-11	METAL CHIP	680K	5%	1/16W
		< TRANSFORMER >			
⚠T5601	1-435-785-21	TRANSFORMER, INVERTER			

A-7074-645-A SI-028 (T) BOARD, COMPLETE
(TRV230/TRV330)
****
A-7074-673-A SI-029 (T) BOARD, COMPLETE (TRV530)
****
(Ref.No.;1000Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C305	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C306	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C307	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C308	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C309	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C310	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C311	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C312	1-104-847-11	TANTAL. CHIP	22uF	20%	4V

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN301	1-779-331-11	CONNECTOR, FFC/FPC 14P			
* CN302	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
* CN303	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
CN304	1-779-337-11	CONNECTOR, FFC/FPC 26P			
		< DIODE >			
D303	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D304	8-719-056-85	DIODE UDZS-TE17-8.2B			
D305	8-719-016-74	DIODE 1SS352-TPH3			
D306	8-719-074-30	DIODE SML-310LTT86			
D307	8-719-066-29	DIODE DCW2810			
D308	8-719-067-44	DIODE CL-310IRS-X-TU			
		< FUSE >			
⚠F301	1-533-874-11	FUSE, MICRO (200mA)			
		< FERRITE BEAD >			
FB001	1-414-760-21	FERRITE	0UH (Note)		
FB002	1-414-760-21	FERRITE	0UH (Note)		
		< IC >			
IC301	8-749-012-83	IC PNA4S13M02S0			
		< COIL >			
L301	1-469-525-91	INDUCTOR	10uH		
		< TRANSISTOR >			
Q301	8-729-140-75	TRANSISTOR	2SD999-T1-CLCK		
		< RESISTOR >			
R301	1-216-815-11	METAL CHIP	330	5%	1/16W
R307	1-216-864-91	SHORT	0		
R308	1-216-800-11	RES-CHIP	18	5%	1/16W
R309	1-216-001-00	METAL CHIP	10	5%	1/10W
R310	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R311	1-216-864-91	SHORT	0		
R312	1-216-864-91	SHORT	0		
R313	1-216-864-91	SHORT	0		
R314	1-216-864-91	SHORT	0		
R315	1-216-864-91	SHORT	0		
		< SENSOR >			
SE301	1-418-252-11	SENSOR, ANGULAR VELOCITY (PITCH)			
SE302	1-418-252-21	SENSOR, ANGULAR VELOCITY (YAW)			
		< VARISTOR >			
VDR301	1-801-862-11	VARISTOR, CHIP			
VDR302	1-801-862-11	VARISTOR, CHIP			

Ref. No.	Part No.	Description			Remarks
	A-7096-436-A	VC-254 (BNA) BOARD, COMPLETE (SERVICE)			
					(TRV230)
		***************************************			
	A-7096-438-A	VC-254 (BFNA) BOARD, COMPLETE (SERVICE)			
					(TRV330)
		***************************************			
	A-7096-439-A	VC-254 (BFNS) BOARD, COMPLETE (SERVICE)			
					(TRV530)
		***************************************			
					(Ref.No.;10000Series)
		< CAPACITOR >			
C1101	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1102	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1104	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1320	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
					(TRV330/TRV530)
C1301	1-164-933-11	CERAMIC CHIP	220PF	10%	16V
C1302	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1303	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1304	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1305	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C1306	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1307	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C1308	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C1309	1-164-936-11	CERAMIC CHIP	680PF	10%	16V
C1310	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C1311	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C1312	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C1313	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1314	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1315	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1316	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1317	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1318	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1319	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1321	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1322	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1323	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1326	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1327	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1328	1-162-974-11	CERAMIC CHIP	0.01uF		50V
					(TRV230/TRV330)
C1329	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1330	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1331	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1332	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1333	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C1334	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1335	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1336	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C1337	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C1338	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C1339	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V

Note : This part is newly added to the part with suffix No. -12 only.

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
C1340	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1341	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1342	1-165-319-11	CERAMIC CHIP	0.1uF		50V (TRV230/TRV330)
C1343	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1344	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C1345	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1347	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C1348	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1350	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C1352	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1354	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C1355	1-164-505-11	CERAMIC CHIP	2.2uF		16V (TRV230/TRV330)
C1356	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1357	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C1359	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C1360	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1362	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1363	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C1501	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C1502	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1503	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C1504	1-115-156-11	CERAMIC CHIP	1uF		10V
C1505	1-115-156-11	CERAMIC CHIP	1uF		10V
C1506	1-131-861-91	TANTAL. CHIP	4.7uF	20%	20V
C1507	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1508	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1509	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1511	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1512	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1513	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C1514	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C1515	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1516	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C1517	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C1518	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1519	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1520	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1521	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1522	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1523	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1524	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C1525	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1552	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1554	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C1556	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C1558	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1559	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1560	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1561	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1562	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C1563	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C1564	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1565	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C1566	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1568	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C1569	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1570	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1571	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1572	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2002	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2003	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2005	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C2006	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C2007	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C2008	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
C2009	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C2010	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
C2012	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C2014	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C2015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2201	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2202	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C2204	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2208	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C2210	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2211	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C2212	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2213	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2214	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2215	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2222	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2223	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2224	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2226	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2227	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2229	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2230	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C2232	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C2233	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2234	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2236	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2238	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2240	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2242	1-115-156-11	CERAMIC CHIP	1uF		10V
C2243	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2244	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2247	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2250	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C2291	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2292	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2293	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C3102	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3104	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3105	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3107	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3108	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C3109	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3110	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3111	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3112	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C3113	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3114	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C3115	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3116	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C3117	1-164-935-11	CERAMIC CHIP	470PF	10%	16V

Ref. No.	Part No.	Description			Remarks
C3119	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C3120	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3121	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3122	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3123	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C3124	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C3126	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3127	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3128	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3131	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3133	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3134	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3135	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C3136	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C3137	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3138	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C3139	1-164-878-11	CERAMIC CHIP	150PF	5%	16V
C3141	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C3142	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C3143	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C3144	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C3202	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3203	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3205	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3206	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3210	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C3212	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3213	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3215	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3216	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3217	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3301	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3302	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3303	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3305	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3306	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3307	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	16V
C3308	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	16V
C3309	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3310	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3311	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3312	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3313	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3314	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3315	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3316	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3317	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3318	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3319	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3320	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C3321	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3322	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C3323	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3324	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3325	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3326	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C3327	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C3328	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3329	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3331	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C3332	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3333	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3334	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3335	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3337	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3338	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C3341	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3342	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3343	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3345	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3346	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3348	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3601	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C3603	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3604	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3610	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C3611	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3612	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3614	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3615	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3616	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3617	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3618	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3619	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3620	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3622	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3626	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3629	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3631	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3633	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C3634	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3636	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C3701	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3702	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3704	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C3705	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C3706	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3707	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3708	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C3709	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C3710	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C3711	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C3712	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C3714	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3715	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C3716	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3717	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3719	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3723	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3724	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3728	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C3729	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C3730	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3731	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3732	1-126-246-11	ELECT CHIP	220uF	20%	4V
C3733	1-126-246-11	ELECT CHIP	220uF	20%	4V
C3734	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3735	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3902	1-135-201-11	TANTALUM CHIP	10uF	20%	4V

Ref. No.	Part No.	Description			Remarks
C3903	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3904	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3905	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C3906	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C3908	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3909	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3910	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C3911	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3912	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3913	1-164-668-11	CERAMIC CHIP	510PF	5%	50V
C3914	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3915	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3916	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3917	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3918	1-164-844-11	CERAMIC CHIP	4PF	0.25PF	16V
C3919	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C3920	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C3921	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C3922	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3923	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C3924	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3925	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3926	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3927	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3928	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C3934	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3935	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3936	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4401	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4402	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4403	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4404	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4405	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4406	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4407	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C4408	1-104-912-11	TANTAL. CHIP	3.3uF	10%	6.3V
C4409	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4410	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4411	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4412	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4413	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4414	1-164-933-11	CERAMIC CHIP	220PF	10%	16V
C4415	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C4416	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4417	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C4418	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C4419	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C4420	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C4421	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C4424	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4425	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4426	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4427	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4428	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C4429	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C4430	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C4431	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4432	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4433	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C4434	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C4435	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C4436	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C4437	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4438	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4439	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C4440	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4441	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4442	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4501	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C4504	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C4505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4506	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4508	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4509	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4801	1-115-156-11	CERAMIC CHIP	1uF		10V
C4802	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4803	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4804	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4805	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C4806	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
C4807	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4808	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4810	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4811	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4812	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4813	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4814	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4815	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4816	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4817	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4819	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C4820	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C4821	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C4822	1-164-854-11	CERAMIC CHIP	15PF	5%	16V
C4823	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4824	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4825	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4827	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4902	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C4903	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	16V
C4904	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	16V
C4905	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4906	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4907	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4908	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4909	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4910	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4911	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4912	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5701	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5702	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5703	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5704	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C5705	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C5706	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5709	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5710	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5711	1-110-569-11	TANTAL. CHIP	47uF	20%	4V

Ref. No.	Part No.	Description			Remarks
C5712	1-110-569-11	TANTAL. CHIP	47uF	20%	4V
C5713	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C5714	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C5715	1-104-912-11	TANTAL. CHIP	3.3uF	20%	4V
C5716	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C5717	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5718	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5719	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5720	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5721	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C5722	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5723	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C5724	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5725	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5728	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5730	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5731	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5732	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5733	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5734	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5735	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5736	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5737	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5738	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5739	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5740	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5741	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5742	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C5743	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C5744	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5745	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5746	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C5747	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C5748	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5749	1-164-870-11	CERAMIC CHIP	68PF	5%	16V
C5750	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5751	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5752	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5753	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5754	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5755	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C5756	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5757	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C5758	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5759	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5806	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5807	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C5808	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C5809	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5810	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5812	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5813	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C5814	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C5815	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5816	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C5817	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C5819	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C5820	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C5822	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5823	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
C5824	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5825	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5826	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5827	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5829	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5830	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5832	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C5833	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C5835	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C5836	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C5838	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5839	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C5840	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C5841	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
		< CONNECTOR >			
CN1101	1-766-350-21	CONNECTOR, FFC/FPC 20P			
CN1104	1-774-598-41	CONNECTOR, BOARD TO BOARD 100P			(TRV330/TRV530)
CN1108	1-766-350-21	CONNECTOR, FFC/FPC 20P			
CN1113	1-691-542-21	CONNECTOR, BOARD TO BOARD 48P			
CN1114	1-766-340-21	CONNECTOR, FFC/FPC 10P			
CN1115	1-766-340-21	CONNECTOR, FFC/FPC 10P			
CN1116	1-779-337-11	CONNECTOR, FFC/FPC 26P			
CN1117	1-785-760-21	CONNECTOR, FFC/FPC (ZIF) 45P			
CN1120	1-794-998-21	PIN, CONNECTOR 20P			
CN1501	1-779-332-11	CONNECTOR, FFC/FPC 16P			
CN1551	1-750-360-21	CONNECTOR, FFC/FPC (ZIF) 24P			
CN3101	1-774-636-21	CONNECTOR, FFC/FPC 11P			
* CN4401	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
CN4402	1-766-340-21	CONNECTOR, FFC/FPC 10P			
CN4403	1-766-352-21	CONNECTOR, FFC/FPC 22P			
CN4404	1-766-345-21	CONNECTOR, FFC/FPC 15P			
		< DIODE >			
D1101	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D1102	8-719-062-16	DIODE	01ZA8.2(TPL3) (TRV330/TRV530)		
D1103	8-719-062-16	DIODE	01ZA8.2(TPL3)		
D1105	8-719-062-16	DIODE	01ZA8.2(TPL3) (TRV330/TRV530)		
D1106	8-719-056-85	DIODE	UDZS-TE17-8.2B (TRV330/TRV530)		
D1301	8-719-078-02	DIODE	1SS357(T3SONY1) (TRV230/TRV330)		
D1302	8-719-081-19	DIODE	1SS383(T5RSONY1)		
D1305	8-719-078-02	DIODE	1SS357(T3SONY1) (TRV230/TRV330)		
D1306	8-719-081-19	DIODE	1SS383(T5RSONY1)		
D1501	8-713-103-84	DIODE	1T379-01-T8A		
D1551	8-719-073-01	DIODE	MA111-(K8).S0		
D2201	8-719-081-96	DIODE	KV1870STL		
D2202	8-719-081-96	DIODE	KV1870STL		
D3301	8-719-992-02	DIODE	RB705D-T146		
D3302	8-719-081-96	DIODE	KV1870STL		
D3303	8-719-992-02	DIODE	RB705D-T146		
D3304	8-719-081-96	DIODE	KV1870STL		
D4401	8-719-075-12	DIODE	MA3XD21001S0		
D4802	8-719-421-27	DIODE	MA728-(K8).S0		
D4803	8-719-073-01	DIODE	MA111-(K8).S0		
D4804	8-719-073-01	DIODE	MA111-(K8).S0		
D4806	8-719-421-67	DIODE	MA132WK-(K8).SO		

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Ref. No.	Part No.	Description	Remarks
		< PIN CONNECTOR >	
ET131	1-815-032-21	PIN, CONNECTOR (CASE, SHIELD)	
ET132	1-815-032-21	PIN, CONNECTOR (CASE, SHIELD)	
ET133	1-815-032-21	PIN, CONNECTOR (CASE, SHIELD)	
		< FERRITE BEAD >	
FB1501	1-414-760-21	FERRITE 0UH	
FB1502	1-500-284-21	FERRITE 0UH	
FB1503	1-500-284-21	FERRITE 0UH	
FB1504	1-414-760-21	FERRITE 0UH	
FB1505	1-500-284-21	FERRITE 0UH	
FB1506	1-500-283-11	FERRITE 0UH	
FB2202	1-414-760-21	FERRITE 0UH	
FB2204	1-414-760-21	FERRITE 0UH	
FB2205	1-414-760-21	FERRITE 0UH	
FB2291	1-414-760-21	FERRITE 0UH	
FB3303	1-414-760-21	FERRITE 0UH	
FB3304	1-414-760-21	FERRITE 0UH	
FB3307	1-414-760-21	FERRITE 0UH	
FB3601	1-414-760-21	FERRITE 0UH	
FB3701	1-414-760-21	FERRITE 0UH	
FB4501	1-414-760-21	FERRITE 0UH	
FB4801	1-414-760-21	FERRITE 0UH	
FB4901	1-414-760-21	FERRITE 0UH	
		< IC >	
IC1301	8-752-090-20	IC CXA3057R-T6	
IC1303	8-759-650-28	IC RN5RZ59BA-TL	
IC1304	8-759-075-66	IC TA75S01F(TE85R)	
IC1501	8-752-386-72	IC CXD2444R-T4	
IC1502	8-759-684-90	IC VSP2200Y-1/2K	
IC1552	8-759-681-42	IC NJM12902V(TE2)	
IC1553	8-759-637-96	IC MPC17A135DTAEL	
IC2001	8-759-489-19	IC uPC6756GR-8JG-E2	
IC2201	8-759-670-78	IC HG75C012SFL	
IC2291	8-759-713-19	IC BH2222FV-E2	
IC3101	8-752-086-52	IC CXA2071R-T4	
IC3102	8-759-195-81	IC TC7S86FU(TE85R)	
IC3103	8-752-086-53	IC CXA2072R-T4	
IC3201	8-752-093-69	IC CXA3265R-T4	
IC3202	8-759-075-70	IC TA75S393F-TE85R	
IC3301	8-759-650-74	IC CAIN	
IC3302	8-759-714-10	IC MB90099PFV-G-108-BND-ER	
IC3303	8-759-566-52	IC SN104266PN-TEB	
IC3603	8-759-653-60	IC MB87L1241PFV-G-BND-ER	
IC3701	8-759-599-37	IC AN2225FHQ-EB	
IC3901	8-759-498-52	IC LA9511WL-TBM	
IC4401	8-759-640-85	IC CXA8096R-TBM	
IC4402	8-759-431-41	IC LB1991V-TLM	
IC4501	8-759-835-68	IC MB91192PFF-G-133-BND-ER	
IC4502	8-759-593-47	IC AK6417AM-E2	
IC4801	8-759-680-14	IC S-84239FS-T2	
IC4802	8-759-642-45	IC TL1596CPWR	
IC4803	8-752-921-67	IC CXP921064A-032R-T6	
IC4804	8-759-679-91	IC S-817A33ANB-CUW-T2	
IC4901	8-759-445-94	IC AK6480AM-E2	
IC4902	8-759-836-62	IC MB91192PFF-G-134-BND-ER	
IC5701	8-752-093-72	IC CXA3284R-T6	
IC5702	8-759-647-71	IC AK4550VT-E2	
IC5801	8-759-638-50	IC AN2901FHQ-EB	
		< COIL >	
L1301	1-416-670-11	INDUCTOR 33uH	
L1302	1-416-669-11	INDUCTOR 22uH	
L1303	1-416-669-11	INDUCTOR 22uH	
L1304	1-416-669-11	INDUCTOR 22uH	
L1305	1-416-669-11	INDUCTOR 22uH	
L1306	1-412-056-11	INDUCTOR 4.7uH	
L1307	1-412-056-11	INDUCTOR 4.7uH	
L1308	1-469-557-21	INDUCTOR 22uH	
L1309	1-469-557-21	INDUCTOR 22uH	
L1310	1-412-056-11	INDUCTOR 4.7uH	
L1313	1-469-553-21	INDUCTOR 4.7uH	
L1314	1-469-553-21	INDUCTOR 4.7uH	
L1315	1-469-553-21	INDUCTOR 4.7uH	
L1316	1-414-400-41	INDUCTOR 22uH	
L1317	1-416-669-11	INDUCTOR 22uH	
L1318	1-412-056-11	INDUCTOR 4.7uH	
L1319	1-412-056-11	INDUCTOR 4.7uH (TRV330/TRV530)	
L1320	1-469-524-91	INDUCTOR 4.7uH	
L1501	1-469-555-21	INDUCTOR 10uH	
L1551	1-469-525-91	INDUCTOR 10uH	
L1552	1-469-555-21	INDUCTOR 10uH	
L1553	1-469-525-91	INDUCTOR 10uH	
L2001	1-469-555-21	INDUCTOR 10uH	
L2202	1-469-555-21	INDUCTOR 10uH	
L2204	1-469-525-91	INDUCTOR 10uH	
L2207	1-412-945-11	INDUCTOR 3.3uH	
L2208	1-469-555-21	INDUCTOR 10uH	
L2209	1-469-525-91	INDUCTOR 10uH	
L2291	1-469-555-21	INDUCTOR 10uH	
L3102	1-469-525-91	INDUCTOR 10uH	
L3103	1-469-525-91	INDUCTOR 10uH	
L3104	1-469-555-21	INDUCTOR 10uH	
L3105	1-414-406-41	INDUCTOR 220uH	
L3106	1-412-952-11	INDUCTOR 12uH	
L3201	1-469-526-91	INDUCTOR 22uH	
L3303	1-412-936-11	INDUCTOR 0.56uH	
L3304	1-414-246-11	INDUCTOR 1.8uH	
L3305	1-469-525-91	INDUCTOR 10uH	
L3306	1-469-525-91	INDUCTOR 10uH	
L3307	1-469-525-91	INDUCTOR 10uH	
L3601	1-469-525-91	INDUCTOR 10uH	
L3602	1-469-525-91	INDUCTOR 10uH	
L3701	1-469-525-91	INDUCTOR 10uH	
L3705	1-469-525-91	INDUCTOR 10uH	
L3901	1-469-555-21	INDUCTOR 10uH	
L3902	1-412-948-11	INDUCTOR 5.6uH	
L3903	1-412-957-11	INDUCTOR 33uH	
L3904	1-412-957-11	INDUCTOR 33uH	
L5701	1-469-525-91	INDUCTOR 10uH	
L5803	1-469-560-21	INDUCTOR 68uH	

Ref. No.	Part No.	Description	Remarks
		< TRANSISTOR >	
Q1104	8-729-052-64	TRANSISTOR DTC144EHT2L	
Q1301	8-729-043-60	TRANSISTOR CPH6102-TL	
Q1302	8-729-046-98	TRANSISTOR CPH6702-TL	
Q1303	8-729-046-98	TRANSISTOR CPH6702-TL	
Q1304	8-729-046-98	TRANSISTOR CPH6702-TL	
Q1305	8-729-046-98	TRANSISTOR CPH6702-TL	
Q1306	8-729-046-98	TRANSISTOR CPH6702-TL	
Q1307	8-729-044-58	TRANSISTOR SI2304DS-T1	
Q1308	8-729-044-58	TRANSISTOR SI2304DS-T1	
Q1309	8-729-046-98	TRANSISTOR CPH6702-TL	
Q1311	8-729-101-07	TRANSISTOR 2SB798-T1-DLDK	
Q1312	8-729-052-65	TRANSISTOR 2SA1774HT2L	
Q1314	8-729-052-64	TRANSISTOR DTC144EHT2L	
Q1316	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1321	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1323	8-729-052-65	TRANSISTOR 2SA1774HT2L	
Q1324	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	(TRV230/TRV330)
Q1327	8-759-054-50	TRANSISTOR UP04501008S0	
Q1328	8-759-054-50	TRANSISTOR UP04501008S0	
Q1329	8-729-054-49	TRANSISTOR UP04401008S0	
Q1330	8-729-054-49	TRANSISTOR UP04401008S0	(TRV230/TRV330)
Q1331	8-729-039-86	TRANSISTOR FMMT717TA	
Q1332	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1333	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1551	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1554	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1555	8-729-054-51	TRANSISTOR UP04116008S0	
Q2207	8-759-054-48	TRANSISTOR UP04601008S0	
Q3102	8-729-052-65	TRANSISTOR 2SA1774HT2L	
Q3103	8-729-052-64	TRANSISTOR DTC144EHT2L	
Q3104	8-729-052-64	TRANSISTOR DTC144EHT2L	
Q3107	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3109	8-729-054-44	TRANSISTOR UP04111008S0	
Q3111	8-729-052-65	TRANSISTOR 2SA1774HT2L	
Q3116	8-729-047-19	TRANSISTOR 2SA1965-S-TL	
Q3117	8-759-054-48	TRANSISTOR UP04601008S0	
Q3118	8-729-054-47	TRANSISTOR UP04213008S0	
Q3119	8-759-054-50	TRANSISTOR UP04501008S0	
Q3120	8-759-054-50	TRANSISTOR UP04501008S0	
Q3201	8-729-052-64	TRANSISTOR DTC144EHT2L	
Q3306	8-729-052-65	TRANSISTOR 2SA1774HT2L	
Q3309	8-729-054-49	TRANSISTOR UP04401008S0	
Q3310	8-729-054-49	TRANSISTOR UP04401008S0	
Q3601	8-729-052-65	TRANSISTOR 2SA1774HT2L	
Q3602	8-759-054-48	TRANSISTOR UP04601008S0	
Q3701	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3702	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q3703	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3705	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3902	8-729-122-63	TRANSISTOR 2SA1226-T1E4	
Q3903	8-729-052-65	TRANSISTOR 2SA1774HT2L	
Q4401	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q4402	8-729-052-64	TRANSISTOR DTC144EHT2L	
Q4801	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q4802	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q4804	8-729-041-43	TRANSISTOR HN1L02FU(TE85R)	
Q4806	8-729-042-58	TRANSISTOR RN2102F(TPL3)	
Q4813	8-729-054-47	TRANSISTOR UP04213008S0	
Q4901	8-729-045-71	TRANSISTOR RN1102F(TPL3)	
Q5708	8-729-037-63	TRANSISTOR RN2111F(TPL3)	
Q5716	8-759-054-50	TRANSISTOR UP04501008S0	
Q5717	8-729-054-52	TRANSISTOR UP04216008S0	
Q5718	8-729-054-52	TRANSISTOR UP04216008S0	
		< RESISTOR >	
R1105	1-218-990-11	SHORT 0 (TRV230)	
R1106	1-218-990-11	SHORT 0 (TRV230)	
R1107	1-218-990-11	SHORT 0 (TRV230)	
R1108	1-218-990-11	SHORT 0 (TRV230)	
R1109	1-218-990-11	SHORT 0 (TRV230)	
R1110	1-218-990-11	SHORT 0 (TRV230)	
R1111	1-218-990-11	SHORT 0 (TRV230)	
R1112	1-218-990-11	SHORT 0 (TRV230)	
R1113	1-218-990-11	SHORT 0 (TRV230)	
R1114	1-218-990-11	SHORT 0 (TRV230)	
R1115	1-218-990-11	SHORT 0 (TRV230)	
R1116	1-218-990-11	SHORT 0 (TRV230)	
R1117	1-218-990-11	SHORT 0 (TRV230)	
R1118	1-218-990-11	SHORT 0 (TRV230)	
R1119	1-218-990-11	SHORT 0 (TRV230)	
R1120	1-218-990-11	SHORT 0 (TRV230)	
R1121	1-218-990-11	SHORT 0 (TRV230)	
R1122	1-218-990-11	SHORT 0 (TRV230)	
R1123	1-218-990-11	SHORT 0 (TRV230)	
R1124	1-218-953-11	RES-CHIP 1K 5% 1/16W	
R1127	1-218-974-11	RES-CHIP 56K 5% 1/16W	(TRV230/TRV330)
R1127	1-218-975-11	RES-CHIP 68K 5% 1/16W	(TRV530)
R1128	1-218-974-11	RES-CHIP 56K 5% 1/16W	(TRV530)
R1128	1-218-975-11	RES-CHIP 68K 5% 1/16W	(TRV230/TRV330)
R1131	1-218-973-11	RES-CHIP 47K 5% 1/16W	(TRV230)
R1131	1-218-975-11	RES-CHIP 68K 5% 1/16W	(TRV330/TRV530)
R1132	1-218-974-11	RES-CHIP 56K 5% 1/16W	(TRV330/TRV530)
R1132	1-218-977-11	RES-CHIP 100K 5% 1/16W	(TRV230)
R1134	1-218-990-11	SHORT 0 (TRV230)	
R1144	1-218-961-11	RES-CHIP 4.7K 5% 1/16W	
R1145	1-218-990-11	SHORT 0 (TRV230)	
R1146	1-218-990-11	SHORT 0 (TRV230)	
R1147	1-218-990-11	SHORT 0	
R1148	1-218-990-11	SHORT 0	
R1151	1-218-941-11	RES-CHIP 100 5% 1/16W	
R1152	1-218-941-11	RES-CHIP 100 5% 1/16W	
R1153	1-218-941-11	RES-CHIP 100 5% 1/16W	
R1154	1-218-941-11	RES-CHIP 100 5% 1/16W	
R1155	1-218-941-11	RES-CHIP 100 5% 1/16W	
R1301	1-218-969-11	RES-CHIP 22K 5% 1/16W	

Ref. No.	Part No.	Description			Remarks
R1302	1-218-971-11	RES-CHIP	33K	5%	1/16W
R1303	1-218-974-11	METAL CHIP	56K	0.5%	1/16W
R1304	1-218-971-11	RES-CHIP	33K	5%	1/16W
R1305	1-218-990-11	SHORT	0		
R1306	1-218-967-11	RES-CHIP	15K	5%	1/16W
R1307	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R1309	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1310	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R1311	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1312	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R1313	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R1314	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1316	1-216-864-91	SHORT	0		
R1317	1-218-973-11	RES-CHIP	47K	5%	1/16W
R1318	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R1319	1-218-973-11	RES-CHIP	47K	5%	1/16W
R1320	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1321	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R1322	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R1323	1-218-977-11	RES-CHIP	100K	5%	1/16W
R1326	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1327	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1330	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R1331	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1332	1-208-943-11	METAL CHIP	220K	0.5%	1/16W
R1333	1-218-973-11	RES-CHIP	47K	5%	1/16W
R1334	1-218-977-11	RES-CHIP	100K	5%	1/16W
R1335	1-218-977-11	RES-CHIP	100K	5%	1/16W (TRV230/TRV330)
R1336	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1337	1-218-977-11	RES-CHIP	100K	5%	1/16W (TRV230/TRV330)
R1338	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R1339	1-208-721-11	METAL CHIP	39K	0.5%	1/16W
R1340	1-208-908-81	METAL CHIP	7.5K	0.5%	1/16W
R1341	1-218-961-11	RES-CHIP	4.7K	5%	1/16W (TRV230/TRV330)
R1342	1-208-943-11	METAL CHIP	220K	0.5%	1/16W (TRV230/TRV330)
R1343	1-208-931-11	METAL CHIP	68K	0.5%	1/16W (TRV230/TRV330)
R1345	1-218-990-11	SHORT	0		
R1347	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R1348	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R1349	1-218-990-11	SHORT	0		
R1350	1-216-864-91	SHORT	0		
R1355	1-218-973-11	RES-CHIP	47K	5%	1/16W
R1356	1-218-937-11	RES-CHIP	47	5%	1/16W
R1357	1-218-990-11	SHORT	0		
R1358	1-218-990-11	SHORT	0		
R1359	1-218-990-11	SHORT	0		
R1360	1-218-990-11	SHORT	0		
R1361	1-218-990-11	SHORT	0		
R1362	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R1363	1-208-697-11	METAL CHIP	3.9K	0.5%	1/16W
R1364	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1365	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1366	1-218-943-11	RES-CHIP	150	5%	1/16W
R1369	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R1370	1-208-709-11	METAL CHIP	12K	0.5%	1/16W (TRV230/TRV330)

Ref. No.	Part No.	Description			Remarks
R1370	1-208-909-11	METAL CHIP	8.2K	0.5%	1/16W (TRV530)
R1501	1-216-864-91	SHORT	0		
R1502	1-216-864-91	SHORT	0		
R1503	1-218-977-11	RES-CHIP	100K	5%	1/16W
R1504	1-218-941-11	RES-CHIP	100	5%	1/16W
R1505	1-218-941-11	RES-CHIP	100	5%	1/16W
R1506	1-218-941-11	RES-CHIP	100	5%	1/16W
R1512	1-218-985-11	RES-CHIP	470K	5%	1/16W
R1519	1-218-990-11	SHORT	0		
R1521	1-216-864-91	SHORT	0		
R1523	1-218-945-11	RES-CHIP	220	5%	1/16W
R1551	1-218-973-11	RES-CHIP	47K	5%	1/16W
R1552	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1555	1-218-975-11	RES-CHIP	68K	5%	1/16W
R1556	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1557	1-218-975-11	RES-CHIP	68K	5%	1/16W
R1560	1-218-929-11	RES-CHIP	10	5%	1/16W
R1561	1-218-989-11	RES-CHIP	1M	5%	1/16W
R1562	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R1563	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1564	1-218-981-11	RES-CHIP	220K	5%	1/16W
R1565	1-218-985-11	RES-CHIP	470K	5%	1/16W
R1566	1-218-985-11	RES-CHIP	470K	5%	1/16W
R1567	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R1568	1-218-967-11	RES-CHIP	15K	5%	1/16W
R1569	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1570	1-218-985-11	RES-CHIP	470K	5%	1/16W
R1571	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1572	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1573	1-218-947-11	RES-CHIP	330	5%	1/16W
R1574	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1575	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1576	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1577	1-218-973-11	RES-CHIP	47K	5%	1/16W
R2001	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2002	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2003	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2004	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2005	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2006	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2007	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2008	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2010	1-218-967-11	RES-CHIP	15K	5%	1/16W
R2205	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2206	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2209	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2210	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R2213	1-218-962-11	RES-CHIP	5.6K	5%	1/16W
R2215	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2216	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R2218	1-218-949-11	RES-CHIP	470	5%	1/16W
R2219	1-218-941-11	RES-CHIP	100	5%	1/16W
R2220	1-218-972-11	RES-CHIP	39K	5%	1/16W
R2221	1-218-952-11	RES-CHIP	820	5%	1/16W
R2222	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2223	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R2224	1-218-966-11	RES-CHIP	12K	5%	1/16W
R2225	1-218-949-11	RES-CHIP	470	5%	1/16W
R2226	1-218-990-11	SHORT	0		
R2227	1-218-990-11	SHORT	0		

Ref. No.	Part No.	Description			Remarks
R2228	1-218-990-11	SHORT	0		
R2229	1-218-990-11	SHORT	0		
R2231	1-218-990-11	SHORT	0		
R2240	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2242	1-218-967-11	RES-CHIP	15K	5%	1/16W
R2243	1-218-967-11	RES-CHIP	15K	5%	1/16W
R2244	1-218-966-11	RES-CHIP	12K	5%	1/16W
R2245	1-218-949-11	RES-CHIP	470	5%	1/16W
R2247	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2248	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2255	1-218-990-11	SHORT	0		
R2256	1-218-990-11	SHORT	0		
R3103	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3104	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R3107	1-218-979-11	RES-CHIP	150K	5%	1/16W
R3108	1-218-989-11	RES-CHIP	1M	5%	1/16W
R3109	1-218-966-11	RES-CHIP	12K	5%	1/16W
R3110	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3111	1-218-949-11	RES-CHIP	470	5%	1/16W
R3113	1-218-966-11	RES-CHIP	12K	5%	1/16W
R3114	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3115	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3117	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3118	1-220-196-11	METAL CHIP	13K	0.5%	1/16W
R3119	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R3120	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R3121	1-208-709-11	METAL CHIP	12K	0.5%	1/16W
R3122	1-208-931-11	METAL CHIP	68K	0.5%	1/16W
R3123	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3124	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3125	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R3126	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3127	1-218-971-11	RES-CHIP	33K	5%	1/16W
R3128	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3129	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R3130	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R3131	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R3132	1-218-946-11	RES-CHIP	270	5%	1/16W
R3133	1-218-945-11	RES-CHIP	220	5%	1/16W
R3136	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R3137	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3138	1-218-941-11	RES-CHIP	100	5%	1/16W
R3139	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R3140	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R3141	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R3142	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R3143	1-218-938-11	RES-CHIP	56	5%	1/16W
R3144	1-218-950-11	RES-CHIP	560	5%	1/16W
R3205	1-218-985-11	RES-CHIP	470K	5%	1/16W
R3206	1-218-985-11	RES-CHIP	470K	5%	1/16W
R3210	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3212	1-218-986-11	RES-CHIP	560K	5%	1/16W
R3213	1-218-985-11	RES-CHIP	470K	5%	1/16W
R3214	1-218-981-11	RES-CHIP	220K	5%	1/16W
R3215	1-208-939-11	METAL CHIP	150K	0.5%	1/16W
R3309	1-218-990-11	SHORT	0		
R3310	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3311	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3312	1-218-946-11	RES-CHIP	270	5%	1/16W
R3313	1-218-990-11	SHORT	0		
R3315	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R3316	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R3317	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3318	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3319	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3320	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R3321	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R3322	1-218-941-11	RES-CHIP	100	5%	1/16W
R3323	1-218-947-11	RES-CHIP	330	5%	1/16W
R3324	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3325	1-218-937-11	RES-CHIP	47	5%	1/16W
R3326	1-218-990-11	SHORT	0		
R3328	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W
R3331	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3333	1-218-990-11	SHORT	0		
R3334	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W
R3336	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3337	1-218-990-11	SHORT	0		
R3338	1-208-683-11	METAL CHIP	1K	0.5%	1/16W
R3340	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W
R3343	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3346	1-218-990-11	SHORT	0		
R3349	1-218-990-11	SHORT	0		
R3350	1-218-990-11	SHORT	0		
R3351	1-218-946-11	RES-CHIP	270	5%	1/16W
R3352	1-218-990-11	SHORT	0		
R3356	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R3358	1-218-945-11	RES-CHIP	220	5%	1/16W
R3360	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R3361	1-208-709-11	METAL CHIP	12K	0.5%	1/16W
R3362	1-218-990-11	SHORT	0		
R3364	1-208-709-11	METAL CHIP	12K	0.5%	1/16W
R3365	1-218-990-11	SHORT	0		
R3367	1-218-938-11	RES-CHIP	56	5%	1/16W
R3368	1-218-938-11	RES-CHIP	56	5%	1/16W
R3369	1-218-864-11	METAL CHIP	5.1K	0.5%	1/16W
R3370	1-218-938-11	RES-CHIP	56	5%	1/16W
R3372	1-218-938-11	RES-CHIP	56	5%	1/16W
R3375	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3376	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3385	1-216-864-91	SHORT	0		
R3386	1-216-864-91	SHORT	0		
R3394	1-218-990-11	SHORT	0		
R3395	1-218-990-11	SHORT	0		
R3396	1-218-990-11	SHORT	0		
R3397	1-218-990-11	SHORT	0		
R3398	1-218-990-11	SHORT	0		
R3607	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3611	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3617	1-218-951-11	RES-CHIP	680	5%	1/16W
R3622	1-218-949-11	RES-CHIP	470	5%	1/16W
R3656	1-218-990-11	SHORT	0		
R3657	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3658	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3659	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R3660	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R3701	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3702	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3704	1-218-941-11	RES-CHIP	100	5%	1/16W
R3705	1-218-981-11	RES-CHIP	220K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R3706	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R3708	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R3712	1-218-936-11	RES-CHIP	39	5%	1/16W
R3713	1-218-935-11	RES-CHIP	33	5%	1/16W
R3714	1-218-936-11	RES-CHIP	39	5%	1/16W
R3715	1-218-935-11	RES-CHIP	33	5%	1/16W
R3716	1-218-936-11	RES-CHIP	39	5%	1/16W
R3717	1-218-935-11	RES-CHIP	33	5%	1/16W
R3721	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R3722	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3724	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3726	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3727	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3728	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3729	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3730	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3903	1-218-971-11	RES-CHIP	33K	5%	1/16W
R3904	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3905	1-218-971-11	RES-CHIP	33K	5%	1/16W
R3908	1-218-966-11	RES-CHIP	12K	5%	1/16W
R3909	1-218-989-11	RES-CHIP	1M	5%	1/16W
R3911	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R3912	1-218-947-11	RES-CHIP	330	5%	1/16W
R3913	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3916	1-218-949-11	RES-CHIP	470	5%	1/16W
R3917	1-218-979-11	RES-CHIP	150K	5%	1/16W
R3918	1-218-979-11	RES-CHIP	150K	5%	1/16W
R3919	1-218-950-11	RES-CHIP	560	5%	1/16W
R3920	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R3921	1-218-949-11	RES-CHIP	470	5%	1/16W
R3922	1-218-972-11	RES-CHIP	39K	5%	1/16W
R3923	1-218-949-11	RES-CHIP	470	5%	1/16W
R3924	1-218-949-11	RES-CHIP	470	5%	1/16W
R3936	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R3939	1-218-990-11	SHORT	0		
R3940	1-218-990-11	SHORT	0		
R3943	1-218-966-11	RES-CHIP	12K	5%	1/16W
R4401	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4402	1-218-983-11	RES-CHIP	330K	5%	1/16W
R4405	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4407	1-218-949-11	RES-CHIP	470	5%	1/16W
R4408	1-217-671-11	METAL CHIP	1	5%	1/10W
R4409	1-217-671-11	METAL CHIP	1	5%	1/10W
R4410	1-217-671-11	METAL CHIP	1	5%	1/10W
R4411	1-216-023-00	METAL CHIP	82	5%	1/10W
R4414	1-218-946-11	RES-CHIP	270	5%	1/16W
R4416	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4417	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R4423	1-218-990-11	SHORT	0		
R4424	1-218-971-11	RES-CHIP	33K	5%	1/16W
R4425	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R4426	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4427	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4428	1-217-671-11	METAL CHIP	1	5%	1/10W
R4429	1-217-671-11	METAL CHIP	1	5%	1/10W
R4430	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4431	1-218-967-11	RES-CHIP	15K	5%	1/16W
R4432	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4434	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4435	1-218-965-11	RES-CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R4436	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4447	1-218-971-11	RES-CHIP	33K	5%	1/16W
R4448	1-218-971-11	RES-CHIP	33K	5%	1/16W
R4449	1-218-972-11	RES-CHIP	39K	5%	1/16W
R4450	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R4451	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R4452	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R4453	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4502	1-218-990-11	SHORT	0		
R4503	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4507	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4508	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4511	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4512	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4514	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4520	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4521	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4522	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4523	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4524	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4526	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4527	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4530	1-218-949-11	RES-CHIP	470	5%	1/16W
R4801	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4802	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4803	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4805	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4806	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4807	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R4808	1-218-990-11	SHORT	0		
R4809	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4810	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4811	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4812	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4813	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4814	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4815	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4816	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4817	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R4818	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R4819	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R4820	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4821	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4822	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4823	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4824	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R4829	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4830	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4832	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4833	1-218-985-11	METAL CHIP	470K	0.5%	1/16W
R4834	1-218-985-11	METAL CHIP	470K	0.5%	1/16W
R4835	1-218-989-11	METAL CHIP	1M	0.5%	1/16W
R4836	1-218-989-11	METAL CHIP	1M	0.5%	1/16W
R4840	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4855	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4861	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4862	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4863	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4864	1-218-986-11	RES-CHIP	560K	5%	1/16W
R4867	1-218-985-11	RES-CHIP	470K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R4868	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4869	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4872	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4873	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4876	1-219-570-11	RES-CHIP	10M	5%	1/16W
R4878	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4882	1-218-949-11	RES-CHIP	470	5%	1/16W
R4883	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4884	1-218-990-11	SHORT	0		
R4885	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4886	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4887	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4888	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4897	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4898	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4899	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4901	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4902	1-218-986-11	RES-CHIP	560K	5%	1/16W
R4903	1-218-990-11	SHORT	0		
R4904	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4906	1-218-990-11	SHORT	0		
R4908	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4910	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4911	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4912	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4913	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R4915	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4916	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4917	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4918	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R4920	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4921	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4922	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4923	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4924	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4925	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4926	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4927	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4928	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4929	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4930	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4931	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4932	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4935	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4936	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4943	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4944	1-218-953-11	RES-CHIP	1K	5%	1/16W
R5707	1-218-953-11	RES-CHIP	1K	5%	1/16W
R5708	1-218-953-11	RES-CHIP	1K	5%	1/16W
R5709	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5710	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5711	1-218-941-11	RES-CHIP	100	5%	1/16W
R5712	1-218-941-11	RES-CHIP	100	5%	1/16W
R5714	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5715	1-218-965-11	RES-CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R5717	1-218-953-11	RES-CHIP	1K	5%	1/16W (TRV330/TRV530)
R5718	1-218-967-11	RES-CHIP	15K	5%	1/16W (TRV230)
R5718	1-218-973-11	RES-CHIP	47K	5%	1/16W (TRV330/TRV530)
R5719	1-218-975-11	RES-CHIP	68K	5%	1/16W (TRV330/TRV530)
R5719	1-218-976-11	RES-CHIP	82K	5%	1/16W (TRV230)
R5720	1-218-979-11	RES-CHIP	150K	5%	1/16W
R5721	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5724	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5725	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5730	1-218-952-11	RES-CHIP	820	5%	1/16W
R5731	1-218-949-11	RES-CHIP	470	5%	1/16W
R5732	1-218-949-11	RES-CHIP	470	5%	1/16W
R5733	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5742	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5743	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5744	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5745	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5746	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5747	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5801	1-218-971-11	RES-CHIP	33K	5%	1/16W
R5802	1-218-968-11	RES-CHIP	18K	5%	1/16W
R5803	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5805	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R5806	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5807	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R5809	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5814	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R5815	1-218-953-11	RES-CHIP	1K	5%	1/16W
R5816	1-218-953-11	RES-CHIP	1K	5%	1/16W
R5817	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5818	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5819	1-208-910-11	RES-CHIP	9.1K	5%	1/16W
R5820	1-220-193-81	RES-CHIP	7.5K	5%	1/16W
R5821	1-208-910-11	RES-CHIP	9.1K	5%	1/16W
R5822	1-220-193-81	RES-CHIP	7.5K	5%	1/16W
R5823	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R5824	1-218-990-11	SHORT	0		
R5825	1-218-990-11	SHORT	0		
R5826	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R5827	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R5828	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R5829	1-218-971-11	RES-CHIP	33K	5%	1/16W
R5831	1-218-990-11	SHORT	0		
R5834	1-218-965-11	RES-CHIP	10K	5%	1/16W

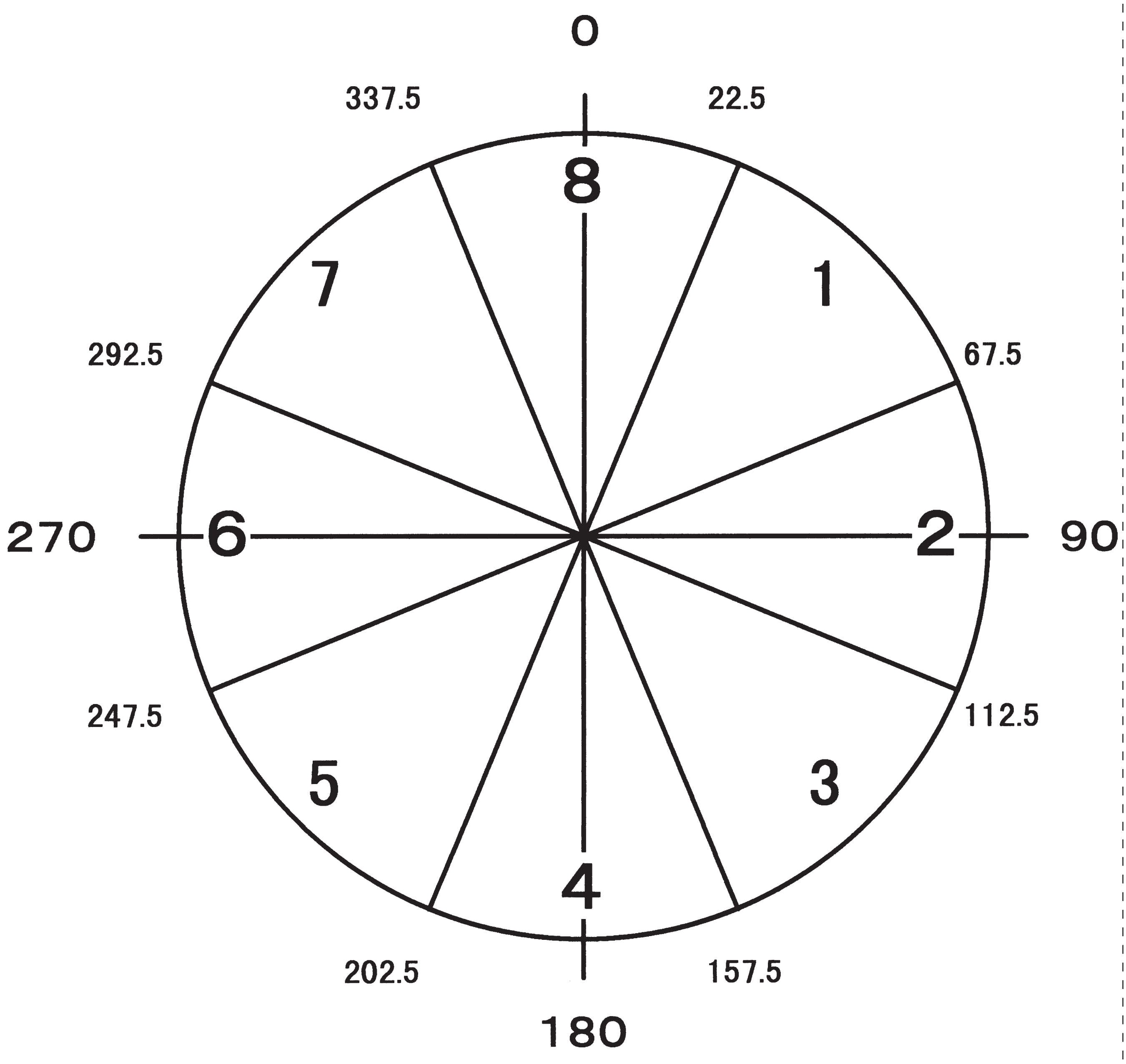
< COMPOSITION CIRCUIT BLOCK >

Ref. No.	Part No.	Description	Remarks
RB4402	1-234-381-21	RES, NETWORK 100KX4	(1005)
RB4501	1-234-381-21	RES, NETWORK 100KX4	(1005)
RB4502	1-234-381-21	RES, NETWORK 100KX4	(1005)
RB4801	1-234-375-21	RES, NETWORK 1KX4	(1005)
RB4803	1-234-383-21	RES, NETWORK 470KX4	(1005)

Ref. No.	Part No.	Description	Remarks
RB4804	1-234-383-21	RES, NETWORK 470KX4 (1005)	
RB4812	1-234-375-21	RES, NETWORK 1KX4 (1005)	
RB4814	1-234-381-21	RES, NETWORK 100KX4 (1005)	
RB4817	1-234-378-21	RES, NETWORK 10KX4 (1005)	
RB4818	1-234-381-21	RES, NETWORK 100KX4 (1005)	
RB4903	1-234-381-21	RES, NETWORK 100KX4 (1005)	
		< TRANSFORMER >	
T1301	1-435-252-21	TRANSFORMER, DC-DC CONVERTER	
		< VIBRATOR >	
X1501	1-767-586-21	VIBRATOR, CRYSTAL (27MHz)	
X3301	1-767-399-11	VIBRATOR, CRYSTAL (24.576MHz)	
X4801	1-767-980-21	VIBRATOR, CERAMIC (20MHz)	
X4802	1-760-458-21	VIBRATOR, CRYSTAL (32.768KHZ)	
X4901	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)	
		ACCESSORIES ***********	
	1-475-141-61	REMOTE COMMANDER (RMT-814)	
⚠	1-475-599-11	ADAPTOR, AC (AC-L10A) (TRV230:US,CND,E,HK,AR/TRV330:US,CND,E,HK,JE,BR/TRV530:US,CND,E,HK,AR)	
⚠	1-475-599-71	ADAPTOR, AC (AC-L10A) (TRV230:KR/TRV330:KR/TRV530:KR)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (TRV330:JE/TRV530:JE)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (TRV230:E,HK/TRV330:E,HK/TRV530:E,HK,AR)	
	1-757-293-11	CORD, CONNECTION (USB 5P)(1.5m) (TRV330/TRV530)	
	1-765-080-11	CORD, CONNECTION (AV CABLE) (1.5m)	
⚠	1-769-608-11	CORD, POWER(TRV230:E/TRV330:E/TRV530:E)	
⚠	1-776-985-11	CORD, POWER (TRV230:KR/TRV330:KR/TRV530:KR)	
⚠	1-783-374-11	CORD, POWER (TRV230:HK/TRV330:HK/TRV530:HK)	
⚠	1-783-952-11	CORD, POWER (TRV230:AR/TRV530:AR)	
⚠	1-790-107-22	CORD, POWER (TRV230:US,CND/TRV330:US,CND/TRV530:US,CND)	
⚠	1-790-732-11	CORD, POWER (TRV330:JE/TRV530:JE)	
	3-065-262-12	MANUAL, INSTRUCTION (ENGLISH) (TRV230:US,CND,E,HK/TRV330:US,CND,E,HK,JE/TRV530:US,CND,E,HK,JE)	
	3-065-262-22	MANUAL, INSTRUCTION (FRENCH) (TRV230:CND/TRV330:CND/TRV530:CND)	
	3-065-262-32	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TRV230:E,AR/TRV330:E,JE/TRV530:E,KR,JE,AR)	
	3-065-262-42	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (TRV230:E,HK/TRV330:E,HK/TRV530:E,HK)	
	3-065-262-52	MANUAL, INSTRUCTION (ARABIC) (TRV230:E/TRV330:E/TRV530:E)	
	3-065-262-62	MANUAL, INSTRUCTION (KOREAN) (TRV230:KR/TRV330:KR,JE/TRV530:KR,JE)	
	3-066-326-01	SPVD-004 (TRV330:US,CND,E,HK,KR,JE,BR/TRV530:US,CND,E,HK,KR,JE,AR)	
	3-066-676-01	CD-ROM SPVD-004 (P)(TRV330:E/TRV530:E)	
	3-987-015-01	BELT (S), SHOULDER	
	A-7033-740-A	MEMORY STICK (TRV330/TRV530)	
	A-7096-387-A	NP-FM30 BATTERY PACK	
	X-3949-376-3	CAP (N) ASSY, LENS	

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

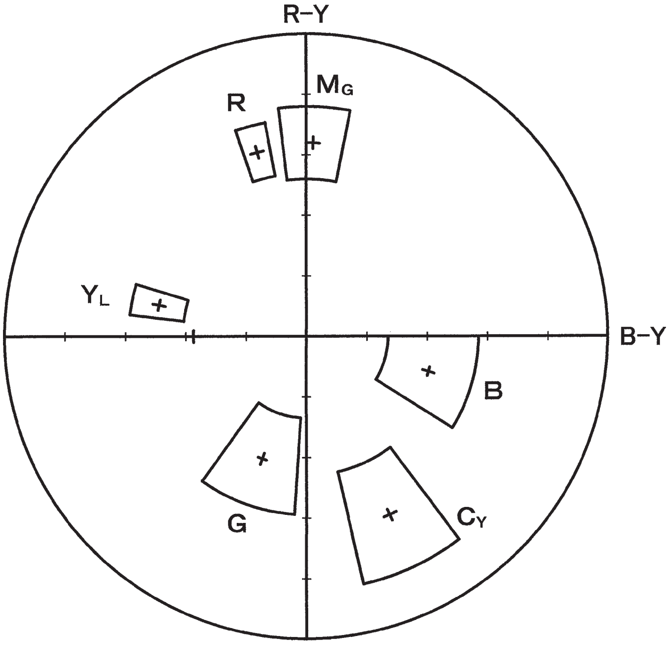
⟨OPTICAL AXIS FRAME⟩


0
337.5
22.5
8
7
1
292.5
67.5
270
6
2
90
247.5
112.5
5
3
4
202.5
157.5
180

Take a copy of OPTICAL AXIS FRAME with a clear sheet for use.

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.



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DCR-TRV230/TRV330/TRV530

RMT-814

SONY®

SERVICE MANUAL

2001. 07

US Model
Canadian Model
E Model
Hong Kong Model
Korea Model
DCR-TRV230/TRV330/TRV530
Tourist Model
DCR-TRV330/TRV530
Argentina Model
DCR-TRV230/TRV530
Brazilian Model
DCR-TRV330

SUPPLEMENT-1

File this supplement-1 with the Service Manual.
(EVB11596)(EVB11956)

Subject
- LCD panel (2.5-inch type) is changed. As the result the following items are changed at the same time.
  1. Cold cathode fluorescent tube is changed
  2. PD-138 board is changed to PD-139 board
  3. VC-254 board is changed
  4. Adjustment method is changed
- CD-ROM (SPVD-004) is changed

- This Supplement-1 supports replacement of LCD panel (2.5-inch type)(DCR-TRV230/TRV330 models. TRV530 has not relation with this supplement. Because it uses 3.5-inch LCD) from the LCD type SH to the LCD type SO.
- To check the LCD type, refer to section "1-5. LCD Type Check of 5. Adjustment". (See page 6.)
- The above described parts do not have compatibility each other. Be sure to replace all of the related parts at the same as listed and perform the adjustment.

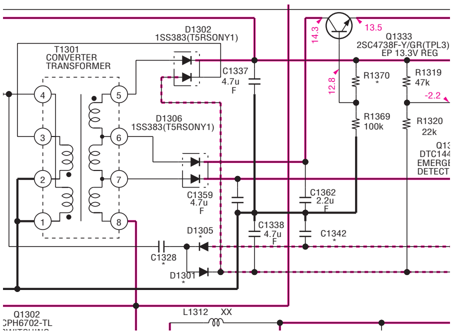
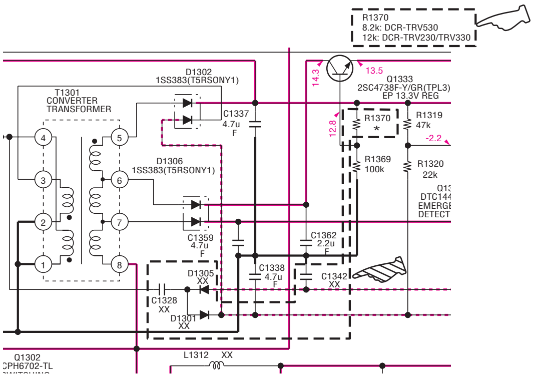
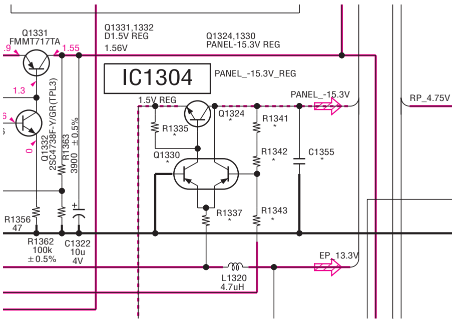
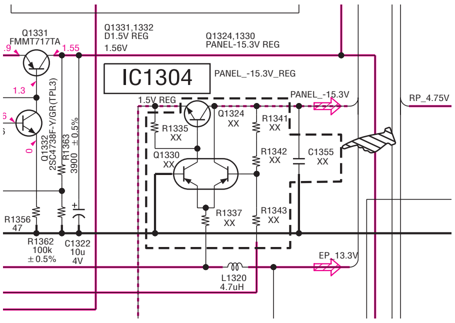
- Main differences are shown below.

	LCD TYPE SH for TRV230/TRV330	**LCD TYPE SO for TRV230/TRV330**
LCD PANEL	INDICATOR MODULE LIQUID CRYST 1-803-852-21	INDICATOR MODULE LIQUID CRYST 8-753-050-65
Cold Cathode Fluorescent Tube	1-518-725-21	1-518-725-11
PD-138 Board	A-7074-646-A (TRV230/TRV330)	———
PD-139 Board	———	A-7074-786-A (TRV230/TRV330)
VC-254 Board	A-7096-436-A (TRV230) A-7096-438-A (TRV330)	A-7096-436-B (TRV230) A-7096-438-B (TRV330)

SECTION 4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

: Added portion. : Changed portion. : Deleted portion.

LCD Type	LCD Type SH for TRV230/TRV330	LCD Type SO for TRV230/TRV330
4-49	**VC-254 BOARD (18/18)** **< LOCATION H-9 to J-10 >**  D1302 1SS383(T5RSONY1) T1301 CONVERTER TRANSFORMER C1337 4.7u F D1306 1SS383(T5RSONY1) C1359 4.7u F D1305 C1338 4.7u F C1328 D1301 C1362 2.2u F C1342 Q1333 2SC4738F-Y/GR(TPL3) EP 13.3V REG R1370 R1369 100k R1319 47k R1320 22k 13.5 14.3 12.8 -2.2 Q1302 CPH6702-TL L1312 XX	**VC-254 BOARD (18/18)** **< LOCATION H-9 to J-10 >**  R1370 8.2k: DCR-TRV530 12k: DCR-TRV230/TRV330 D1302 1SS383(T5RSONY1) T1301 CONVERTER TRANSFORMER C1337 4.7u F D1306 1SS383(T5RSONY1) C1359 4.7u F D1305 XX C1338 4.7u F C1328 XX D1301 XX C1362 2.2u F C1342 XX Q1333 2SC4738F-Y/GR(TPL3) EP 13.3V REG R1370 * R1369 100k R1319 47k R1320 22k 13.5 14.3 12.8 -2.2 Q1302 CPH6702-TL L1312 XX
4-50	**VC-254 BOARD (18/18)** **< LOCATION G-15 to H-16 >**  Q1331 FMMT717TA Q1331,1332 D1.5V REG 1.56V Q1324,1330 PANEL-15.3V REG IC1304 PANEL_-15.3V_REG PANEL_-15.3V RP_4.75V 1.5V REG Q1324 R1335 R1341 Q1330 R1342 C1355 R1337 R1343 Q1332 2SC4738F-Y/GR(TPL3) R1363 3900 ±0.5% R1356 47 R1362 100k ±0.5% C1322 10u 4V L1320 4.7uH EP_13.3V 1.55 1.3	**VC-254 BOARD (18/18)** **< LOCATION G-15 to H-16 >**  Q1331 FMMT717TA Q1331,1332 D1.5V REG 1.56V Q1324,1330 PANEL-15.3V REG IC1304 PANEL_-15.3V_REG PANEL_-15.3V RP_4.75V 1.5V REG Q1324 XX R1335 XX R1341 XX Q1330 XX R1342 XX C1355 XX R1337 XX R1343 XX Q1332 2SC4738F-Y/GR(TPL3) R1363 3900 ±0.5% R1356 47 R1362 100k ±0.5% C1322 10u 4V L1320 4.7uH EP_13.3V 1.55 1.3

*MARKED:MOUNT TABLE

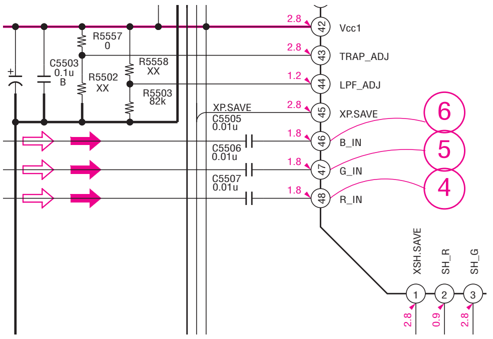
REF.NO.	C1328	C1342	C1355	D1301	D1305	Q1324	Q1330	R1335	R1337	R1341	R1342	R1343	R1370
DCR-TRV230/ TRV330	0.01u	0.1u	2.2u	1SS357 (T3SONY1)	1SS357 (T3SONY1)	2SC4738F-Y	UP04401008S0	100k	100k	4.7k	220k	68k	12k
DCR-TRV530	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	8.2k

☞: Added portion. ▨: Changed portion. ☛: Deleted portion.

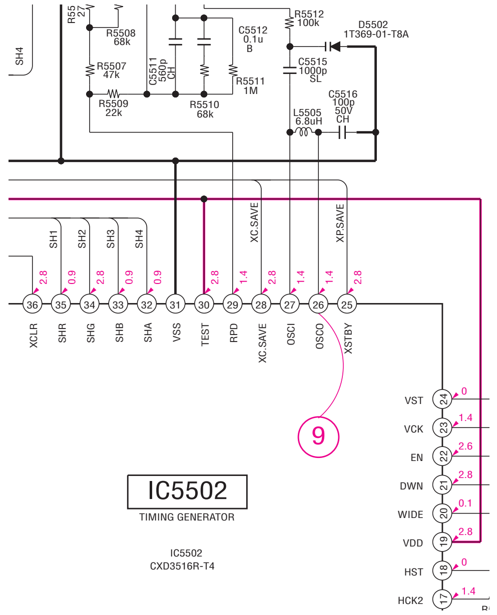
LCD Type	LCD Type SH for TRV230/TRV330	LCD Type SO for TRV230/TRV330
4-95, 4-96	See left column below	See right column below

LCD Type SH for TRV230/TRV330

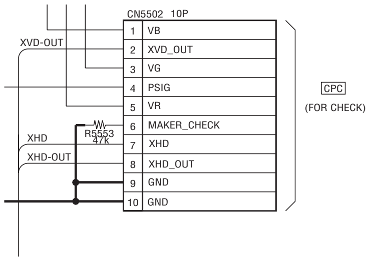
PD-139 BOARD (1/2)(DCR-TRV530)
< LOCATION D-5 >


R5557
0
C5503
0.1u
B
R5502
XX
R5558
XX
R5503
82k
XP.SAVE
C5505
0.01u
C5506
0.01u
C5507
0.01u
2.8
2.8
1.2
2.8
1.8
1.8
1.8
42
43
44
45
46
47
48
Vcc1
TRAP_ADJ
LPF_ADJ
XP.SAVE
B_IN
G_IN
R_IN
6
5
4
XSH.SAVE
SH_R
SH_G
1
2
3
2.8
0.9
2.8

< LOCATION F-10, I-9 >

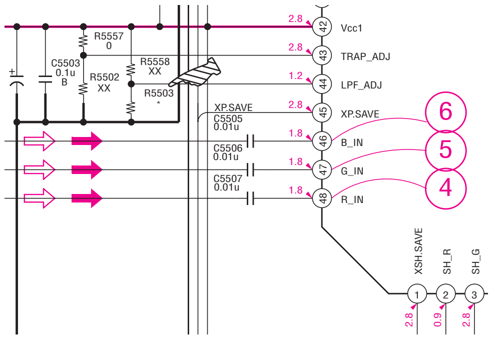

SH4
R55
27
R5508
68k
R5507
47k
R5509
22k
C5511
560p
CH
C5512
0.1u
B
R5510
68k
R5511
1M
R5512
100k
D5502
1T369-01-T8A
C5515
1000p
SL
C5516
100p
50V
CH
L5505
6.8uH
SH1
SH2
SH3
SH4
XC.SAVE
XP.SAVE
2.8
0.9
2.8
0.9
0.9
2.8
1.4
2.8
1.4
1.4
2.8
36
35
34
33
32
31
30
29
28
27
26
25
XCLR
SHR
SHG
SHB
SHA
VSS
TEST
RPD
XC.SAVE
OSCI
OSCO
XSTBY
9
VST
VCK
EN
DWN
WIDE
VDD
HST
HCK2
24
23
22
21
20
19
18
17
0
1.4
2.6
2.8
0.1
2.8
0
1.4
IC5502
TIMING GENERATOR
IC5502
CXD3516R-T4

< LOCATION J-15 >

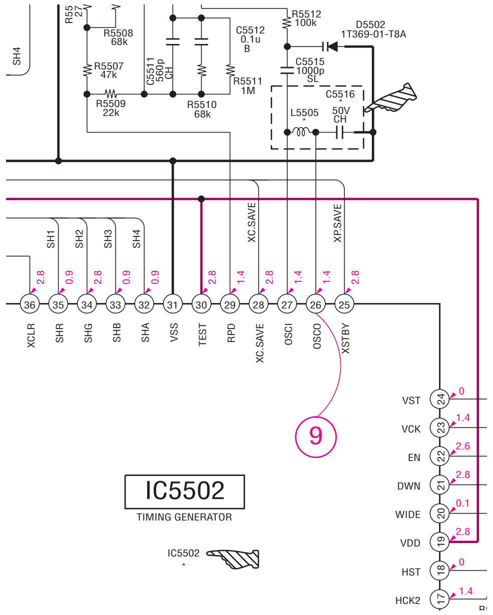

CN5502 10P
1 VB
2 XVD_OUT
3 VG
4 PSIG
5 VR
6 MAKER_CHECK
7 XHD
8 XHD_OUT
9 GND
10 GND
XVD-OUT
XHD
XHD-OUT
R5553
47k
CPC
(FOR CHECK)

LCD Type SO for TRV230/TRV330

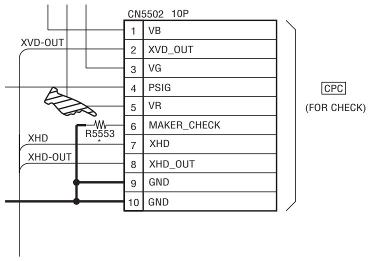
PD-139 BOARD (1/2)
< LOCATION D-5 >


R5557
0
C5503
0.1u
B
R5502
XX
R5558
XX
R5503
*
XP.SAVE
C5505
0.01u
C5506
0.01u
C5507
0.01u
2.8
2.8
1.2
2.8
1.8
1.8
1.8
42
43
44
45
46
47
48
Vcc1
TRAP_ADJ
LPF_ADJ
XP.SAVE
B_IN
G_IN
R_IN
6
5
4
XSH.SAVE
SH_R
SH_G
1
2
3
2.8
0.9
2.8

< LOCATION F-10, I-9 >


SH4
R55
27
R5508
68k
R5507
47k
R5509
22k
C5511
560p
CH
C5512
0.1u
B
R5510
68k
R5511
1M
R5512
100k
D5502
1T369-01-T8A
C5515
1000p
SL
C5516
*
L5505
*
50V
CH
SH1
SH2
SH3
SH4
XC.SAVE
XP.SAVE
2.8
0.9
2.8
0.9
0.9
2.8
1.4
2.8
1.4
1.4
2.8
36
35
34
33
32
31
30
29
28
27
26
25
XCLR
SHR
SHG
SHB
SHA
VSS
TEST
RPD
XC.SAVE
OSCI
OSCO
XSTBY
9
VST
VCK
EN
DWN
WIDE
VDD
HST
HCK2
24
23
22
21
20
19
18
17
0
1.4
2.6
2.8
0.1
2.8
0
1.4
IC5502
TIMING GENERATOR
IC5502
*

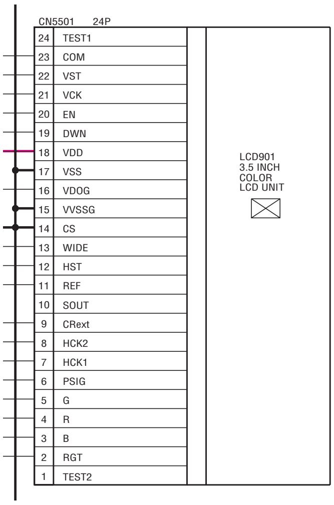
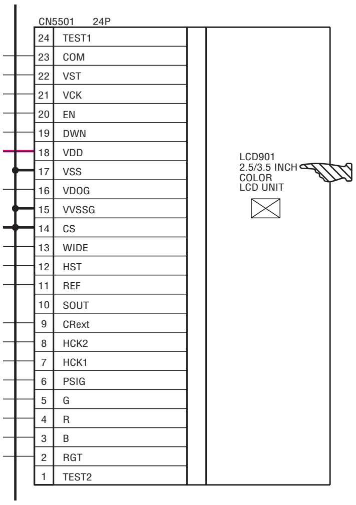
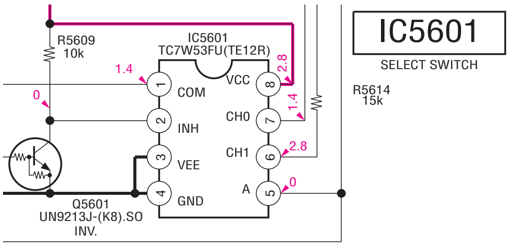
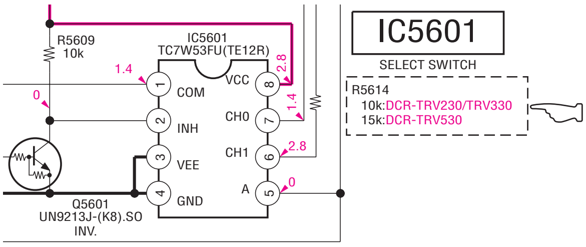
< LOCATION J-15 >


CN5502 10P
1 VB
2 XVD_OUT
3 VG
4 PSIG
5 VR
6 MAKER_CHECK
7 XHD
8 XHD_OUT
9 GND
10 GND
XVD-OUT
XHD
XHD-OUT
R5553
*
CPC
(FOR CHECK)

*MARKED:MOUNT TABLE

REF.NO.	C5516	IC5502	L5505	R5503	R5553
DCR-TRV230/ TRV330	82P	CXD3512R-T4	27uH	100k	22k
DCR-TRV530	100P	CXD3516R-T4	6.8uH	82k	47k

☞: Added portion. ▨: Changed portion. ☛: Deleted portion.

LCD Type	LCD Type SH for TRV230/TRV330	LCD Type SO for TRV230/TRV330
4-96	**PD-139 BOARD (1/2)(DCR-TRV530)** **< LOCATION F-15 >**  CN5501 24P 24 TEST1 23 COM 22 VST 21 VCK 20 EN 19 DWN 18 VDD 17 VSS 16 VDOG 15 VVSSG 14 CS 13 WIDE 12 HST 11 REF 10 SOUT 9 CRext 8 HCK2 7 HCK1 6 PSIG 5 G 4 R 3 B 2 RGT 1 TEST2 LCD901 3.5 INCH COLOR LCD UNIT	**PD-139 BOARD (1/2)** ☛ **< LOCATION F-15 >**  CN5501 24P 24 TEST1 23 COM 22 VST 21 VCK 20 EN 19 DWN 18 VDD 17 VSS 16 VDOG 15 VVSSG 14 CS 13 WIDE 12 HST 11 REF 10 SOUT 9 CRext 8 HCK2 7 HCK1 6 PSIG 5 G 4 R 3 B 2 RGT 1 TEST2 LCD901 2.5/3.5 INCH COLOR LCD UNIT
4-97	**PD-139 BOARD (2/2)(DCR-TRV530)** **< LOCATION H-5 >**  R5609 10k IC5601 TC7W53FU(TE12R) 1.4 0 2.8 1.4 2.8 0 1 COM 2 INH 3 VEE 4 GND 5 A 6 CH1 7 CH0 8 VCC Q5601 UN9213J-(K8).SO INV. IC5601 SELECT SWITCH R5614 15k	**PD-139 BOARD (2/2)** ☛ **< LOCATION H-5 >**  R5609 10k IC5601 TC7W53FU(TE12R) 1.4 0 2.8 1.4 2.8 0 1 COM 2 INH 3 VEE 4 GND 5 A 6 CH1 7 CH0 8 VCC Q5601 UN9213J-(K8).SO INV. IC5601 SELECT SWITCH R5614 10k:DCR-TRV230/TRV330 15k:DCR-TRV530

SECTION 5. ADJUSTMENTS

: Changed portion.

LCD Type

5-3

LCD Type SH for TRV230/TRV330

1. Before starting adjustment

1-1. Adjusting items when replacing main parts and boards.

*1: When replacing the drum assy or mechanism deck, reset the data of page: 2, address: A2 to A4 to “00”. (Refer to “Record of Use check” of “5-4. SERVICE MODE”)
*2: DCR-TRV330/TRV530
*3: DCR-TRV230/TRV330
*4: DCR-TRV530
*5: CF-079 board (Part No. suffix: 12 or later)
CF-080 board (Part No. suffix: 13 or later)

Note: CD-292 board: DCR-TRV230/TRV330
CD-315 board: DCR-TRV530
CF-079 board: DCR-TRV230/TRV330
CF-080 board: DCR-TRV530
PD-138 board: DCR-TRV230/TRV330
PD-139 board: DCR-TRV530
SI-028 board: DCR-TRV230/TRV330
SI-029 board: DCR-TRV530

LCD Type SO for TRV230/TRV330

1. Before starting adjustment

1-1. Adjusting items when replacing main parts and boards.

*3: DCR-TRV230/TRV330 (LCD TYPE SH)
*4: DCR-TRV530
DCR-TRV230/TRV330 (LCD TYPE SO)

Note: CD-292 board: DCR-TRV230/TRV330
CD-315 board: DCR-TRV530
CF-79 board: DCR-TRV230/TRV330
CF-80 board: DCR-TRV530
PD-138 board: DCR-TRV230/TRV330 (LCD TYPE SH)
PD-139 board: DCR-TRV530
DCR-TRV230/TRV330 (LCD TYPE SO)
SI-28 board: DCR-TRV230/TRV330
SI-29 board: DCR-TRV530

5-10

LCD Type SH for TRV230/TRV330

1-2. INITIALIZATION OF B, C, D, E, F, 7, 8 PAGE DATA

4. D Page Table

Address	Initial value	Remark
99	37	Contrast adj. (EVF)
9A to 9F		Fixed data-1
A0		Fixed data-2
A1		
A2	80	VCO adj. (LCD)
A3	70	
A4	80/26	V-COM adj. (LCD)
A5	2B/B3	RGB AMP adj.(LCD)
A6	00/09	Fixed data (TRV230,TRV330) Black limit adj. (LCD) (TRV530)
A7	B5/41	COM AMP adj. (LCD) (TRV230,TRV330) PSIG gray adj. (LCD) (TRV530)
A8	80	White balance adj. (LCD)
A9	80	
AA	3E/1A	Contrast adj. (LCD)
AB	00/4A	Fixed data (TRV230,TRV330) Center levei adj. (LCD) (TRV530)
AC		Fixed data-2
AD		
AE		Fixed data-1
AF		Fixed data-2
B0 to FF		Fixed data-1

Note: XX / YY
XX : DCR-TRV230/TRV330
YY : DCR-TRV530

*1 : CF-079 board (Part No. suffix: 11)
CF-080 board (Part No. suffix: 11 or 12)
*2 : CF-079 board (Part No. suffix: 12 or later)
CF-080 board (Part No. suffix: 13 or later)

Table. 5-1-3.

LCD Type SO for TRV230/TRV330

1-2. INITIALIZATION OF B, C, D, E, F, 7, 8 PAGE DATA

4. D Page Table

Address	Initial value	Remark
99	37	Contrast adj. (EVF)
9A to 9F		Fixed data-1
A0	77/71/80	Fixed data
A1	A7/82/A2	
A2	80	VCO adj. (LCD)
A3	70	
A4	80/26/26	V-COM adj. (LCD)
A5	2B/B3/B3	RGB AMP adj.(LCD)
A6	00/09/09	Fixed data (LCD TYPE SH) Black limit adj. (LCD TYPE SO)
A7	B5/41/41	COM AMP adj. (LCD TYPE SH) PSIG gray adj. (LCD TYPE SO)
A8	80	White balance adj. (LCD)
A9	80	
AA	3E/1A/1A	Contrast adj. (LCD)
AB	00/4A/4A	Fixed data (LCD TYPE SH) Center level adj. (LCD TYPE SO)
AC	0F/0E/0E	Fixed data
AD	15/0F/11	
AE		Fixed data-1
AF	1F/DF/5F	Fixed data
B0 to FF		Fixed data-1

Note: XX / YY / ZZ
XX : DCR-TRV230/TRV330 (LCD TYPE SH)
YY : DCR-TRV530 (LCD TYPE SO)
ZZ : DCR-TRV230/TRV330 (LCD TYPE SO)

Table. 5-1-3.

☞ : Added portion. ✎ : Changed portion.

LCD Type	LCD Type SH for TRV230/TRV330	LCD Type SO for TRV230/TRV330

5-29

1-5. LCD SYSTEM ADJUSTMENT

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.
Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.
Note 3: Set the LCD BRIGHT (Menu display) to the center.
Set the LCD COLOR (Menu display) to the center.
Note 4: PD-138 board: DCR-TRV230/TRV330
PD-139 board: DCR-TRV530

[LCD Type Check]

By measuring the resistor value between Pin ⑥ of CN5502 and GND, the type of LCD can be discriminated.

Resistor value	1.0kΩ	47kΩ
LCD type	2.5 LCD TYPE SH (61k)	3.5 LCD TYPE SO (123k)
PD board	PD-138	PD-139
DCR-	TRV230/TRV330	TRV530

Table 5-1-12.

[Adjusting Procedure]

DCR-TRV230/TRV330:

1. VCO adjustment
2. RGB AMP adjustment
3. Contrast adjustment
4. COM AMP adjustment
5. V-COM adjustment
6. White balance adjustment

DCR-TRV530:

1. VCO adjustment
2. RGB AMP adjustment
3. Black limit adjustment
4. Contrast adjustment
5. Center level adjustment
6. V-COM adjustment
7. White balance adjustment

1-5. LCD SYSTEM ADJUSTMENT

✎

Note 4: PD-138 board: DCR-TRV230/TRV330 (LCD TYPE SH)
PD-139 board: DCR-TRV230/TRV330 (LCD TYPE SO)
DCR-TRV530 (LCD TYPE SO)

[LCD Type Check]

By measuring the resistor value between Pin ⑥ of CN5502 and GND, the type of LCD can be discriminated. ☞

Resistor value	1.0kΩ	22kΩ	47kΩ
LCD type	2.5 LCD TYPE SH (61k)	2.5 LCD TYPE SO (61k)	3.5 LCD TYPE SO (123k)
PD board	PD-138	PD-139	PD-139
DCR-	TRV230/TRV330	TRV230/TRV330	TRV530

Table 5-1-12.

[Adjusting Procedure]

LCD TYPE SH: ✎

1. VCO adjustment
2. RGB AMP adjustment
3. Contrast adjustment
4. COM AMP adjustment
5. V-COM adjustment
6. White balance adjustment

LCD TYPE SO: ✎

1. VCO adjustment
2. RGB AMP adjustment
3. Black limit adjustment
4. Contrast adjustment
5. Center level adjustment
6. V-COM adjustment
7. White balance adjustment Changed

: Added portion.

LCD Type	LCD Type SH for TRV230/TRV330	LCD Type SO for TRV230/TRV330
5-29		

0. LCD Initial Data Input (DCR-TRV230/TRV330)

Mode	VTR stop
Signal	No signal
Adjustment Page	D
Adjustment Address	A0, A1, A4 to A7, AA to AC, AF

Note: Refer to "LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data		Remark
	LCD TYPE SH	LCD TYPE SO	
A0	77	80	Fixed data
A1	A7	A2	Fixed data
A4	80	26	V-COM adj.
A5	2B	B3	RGB AMP adj.
A6	00	09	Fixed data (*1) Black limit adj. (*2)
A7	B5	41	COM AMP adj. (*1) PSIG gray adj. (*2)
AA	3E	1A	Contrast adj.
AB	00	4A	Fixed data (*1) Center level adj. (*2)
AC	0F	0E	Fixed data
AF	1F	5F	Fixed data

*1: LCD TYPE SH
*2: LCD TYPE SO

: Added portion.

LCD Type

5-30

LCD Type SH for TRV230/TRV330

1. VCO Adjustment (PD-138/139 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑧ of CN5502 (XHD OUT)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	A2, A3
Specified Value	f = 15734 ± 30Hz

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A2		Change the data and set the VCO frequency (f) to the specified value.
3	D	A2		Press PAUSE button.
4	D	A2		Read the data, and this data is named D_{A2}.
5				Convert D_{A2} to decimal notation, and obtain D_{A2}'. (Note)
6				Calculate D_{A3}' using following equations (Decimal calculation) [DCR-TRV230/TRV330] When $D_{A2}' \leqq 232$ $D_{A3}' = D_{A2}'+23$ When $D_{A2}'>232$ $D_{A3}'=255$ [DCR-TRV530] When $D_{A2}' \leqq 246$ $D_{A3}' = D_{A2}'+9$ When $D_{A2}'>246$ $D_{A3}'=255$
7				Convert D_{A3}' to a hexadecimal number, and obtain D_{A3}. (Note2)
8	D	A3	D_{A3}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note: Refer to “Table 5-4-1. Hexadecimal-decimal Conversion Table”.

2. PSIG Gray Adjustment (PD-139 board) (DCR-TRV530)

Set the uniformity improvement signal to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A7
Specified Value	A = 5.00 ± 0.1V

LCD Type SO for TRV230/TRV330

1. VCO Adjustment (PD-138/139 board)

Note: Refer to “LCD type check” for the discrimination of the LCD type.

Adjusting method:

Order	Page	Address	Data	Procedure
6				Calculate D_{A3}' using following equations (Decimal calculation) [DCR-TRV230/TRV330 (LCD TYPE SH)] When $D_{A2}' \leqq 232$ $D_{A3}' = D_{A2}'+23$ When $D_{A2}'>232$ $D_{A3}'=255$ [DCR-TRV230/TRV330 (LCD TYPE SO)] When $D_{A2}' \leqq 235$ $D_{A3}' = D_{A2}'+20$ When $D_{A2}'>235$ $D_{A3}'=255$ [DCR-TRV530] When $D_{A2}' \leqq 246$ $D_{A3}' = D_{A2}'+9$ When $D_{A2}'>246$ $D_{A3}'=255$
7				

2. PSIG Gray Adjustment (PD-139 board) (DCR-TRV530 /TRV230/TRV330 (LCD TYPE SO))

☞ : Added portion. ▨ : Changed portion.

<table>
<tr><th>LCD Type</th><th>LCD Type SH for TRV230/TRV330</th><th>LCD Type SO for TRV230/TRV330</th></tr>
<tr><td>5-31</td><td>

3. RGB AMP Adjustment (PD-138 board) (DCR-TRV230/TRV330)

4. RGB AMP Adjustment (PD-139 board) (DCR-TRV530)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

<table>
<tr><td>Mode</td><td>VTR stop</td></tr>
<tr><td>Signal</td><td>No signal</td></tr>
<tr><td>Measurement Point</td><td>Pin ③ of CN5502 (VG)
External trigger: Pin ④ of CN5502 (PSIG)</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjustment Page</td><td>D</td></tr>
<tr><td>Adjustment Address</td><td>A5</td></tr>
<tr><td>Specified Value</td><td>A = 7.58 ± 0.05V</td></tr>
</table>

</td><td>

3. RGB AMP Adjustment (PD-138 board) (DCR-TRV230/TRV330 (LCD TYPE SH)) ☞

4. RGB AMP Adjustment (PD-139 board) (DCR-TRV530/TRV230/TRV330 (LCD TYPE SO)) ☞

<table>
<tr><td>Specified Value</td><td>DCR-TRV230/TRV330:
A = 7.58 ± 0.05V
DCR-TRV530:
A = 7.52 ± 0.05V ▨</td></tr>
</table>

</td></tr>
<tr><td>5-32</td><td>

5. Black Limit Adjustment (PD-139 board) (DCR-TRV530)

Set the dynamic range of the LCD driver to an appropriate level. If deviated, the LCD screen will become blackish or saturated (whitish).

6. Contrast Adjustment (PD-138 board) (DCR-TRV230/TRV330)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

</td><td>

5. Black Limit Adjustment (PD-139 board) (DCR-TRV530/TRV230/TRV330 (LCD TYPE SO)) ☞

6. Contrast Adjustment (PD-138 board) (DCR-TRV230/TRV330 (LCD TYPE SH)) ☞

</td></tr>
<tr><td>5-33</td><td>

7. Contrast Adjustment (PD-139 board) (DCR-TRV530)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

<table>
<tr><td>Mode</td><td>VTR stop</td></tr>
<tr><td>Signal</td><td>No signal</td></tr>
<tr><td>Measurement Point</td><td>Pin ③ of CN5502 (VG)
External trigger: Pin ④ of CN5502 (PSIG)</td></tr>
<tr><td>Measuring Instrument</td><td>Oscilloscope</td></tr>
<tr><td>Adjustment Page</td><td>D</td></tr>
<tr><td>Adjustment Address</td><td>AA</td></tr>
<tr><td>Specified Value</td><td>A = 2.76 ± 0.07V</td></tr>
</table>

8. Center Level Adjustment (PD-139 board) (DCR-TRV530)

Set the video signal center level of LCD panel to an appropriate level.

</td><td>

7. Contrast Adjustment (PD-139 board) (DCR-TRV530/TRV230/TRV330 (LCD TYPE SO)) ☞

<table>
<tr><td>Specified Value</td><td>DCR-TRV230/TRV330: ☞
A = 2.80 ± 0.07V
DCR-TRV530:
A = 2.76 ± 0.07V</td></tr>
</table>

8. Center Level Adjustment (PD-139 board) (DCR-TRV530/TRV230/TRV330 (LCD TYPE SO)) ☞

</td></tr>
</table>

☞ : Added portion. ☛ : Changed portion.

LCD Type

5-34

LCD Type SH for TRV230/TRV330

9. COM AMP Adjustment (PD-138 board) (DCR-TRV230/TRV330)

Set the common electrode drive signal level of LCD to the specified value.

10. V-COM Adjustment (PD-138/139 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	A4
Specified Value	The brightness difference between the section A and section B is minimum.

Note: This adjustment should be carried out upon completion of the following adjustments.
[DCR-TRV230/TRV330]
RGB AMP Adjustment
Contrast Adjustment
COM AMP Adjustment
[DCR-TRV530]
RGB AMP Adjustment
Black Limit Adjustment
Contrast Adjustment
Center Level Adjustment

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A4		Change the data so that the brightness of the section A and that of the section B is equal. [DCR-TRV230/TRV330] The data should be “00” to “FF”. [DCR-TRV530] The data should be “00” to “3F”
3	D	A4		[DCR-TRV230/TRV330] Subtract 8 from the data. [DCR-TRV530] Subtract 2 from the data.
4	D	A4		Press PAUSE button.
5	0	01	00	Set the data.

LCD Type SO for TRV230/TRV330

9. COM AMP Adjustment (PD-138 board) ☞ (DCR-TRV230/TRV330 (LCD TYPE SH))

10. V-COM Adjustment (PD-138/139 board)

Note: This adjustment should be carried out upon completion of the following adjustments.
[LCD TYPE SH] ☛
RGB AMP Adjustment
Contrast Adjustment
COM AMP Adjustment
[LCD TYPE SO] ☛
RGB AMP Adjustment
Black Limit Adjustment
Contrast Adjustment
Center Level Adjustment

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A4		Change the data so that the brightness of the section A and that of the section B is equal. [LCD TYPE SH] ☛ The data should be “00” to “FF”. [LCD TYPE SO] ☛ The data should be “00” to “3F”.
3	D	A4		[LCD TYPE SH] ☛ Subtract 8 from the data. [LCD TYPE SO] ☛ Subtract 2 from the data.
4	D	A4		Press PAUSE button.
5	0	01	00	Set the data.

SECTION 6. REPAIR PARTS LIST

6-1. EXPLODED VIEWS

: Changed portion.

LCD Type	LCD Type SH for TRV230/TRV330				LCD Type SO for TRV230/TRV330			
6-2	**6-1-2. CABINET (L) SECTION-1**				**6-1-2. CABINET (L) SECTION-1**			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
	56	A-7096-436-A	VC-254 (BNA) BOARD, COMPLETE	(SERVICE)(TRV230)	56	A-7096-436-B	VC-254 (BNS) BOARD, COMPLETE	(SERVICE)(TRV230)
	56	A-7096-438-A	VC-254 (BFNA) BOARD, COMPLETE	(SERVICE)(TRV330)	56	A-7096-438-B	VC-254 (BFNS) BOARD, COMPLETE	(SERVICE)(TRV330)
	56	A-7096-439-A	VC-254 (BFNS) BOARD, COMPLETE	(SERVICE)(TRV530)	56	A-7096-439-A	VC-254 (BFNS) BOARD, COMPLETE	(SERVICE)(TRV530)
6-6	**6-1-6. LCD SECTION (2.5 INCH LCD MODEL) (TRV230/TRV330)**				**6-1-6. LCD SECTION (2.5 INCH LCD MODEL) (TRV230/TRV330)**			
	255	3-065-368-01	HOLDER (2), LCD		255	3-065-368-01	HOLDER (2), LCD	
	256	A-7074-646-A	PD-138 (XS6) BOARD, COMPLETE		256	A-7074-786-A	PD-139 (X6) BOARD, COMPLETE	
	256	A-7074-696-A	PD-138 BOARD, COMPLETE					
	⚠ND901	1-518-725-21	TUBE, FLUORESCENT,COLD CATHODE		⚠ND901	1-518-725-11	TUBE, FLUORESCENT,COLD CATHODE	
	⚠D902	1-518-721-11	LIGHT, BACK		⚠D902	1-518-721-11	LIGHT, BACK	
	LCD901	1-803-852-21	INDICATOR MODULE LIQUID CRYST		LCD901	8-753-050-65	INDICATOR MODULE LIQUID CRYST	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-2. ELECTRICAL PARTS LIST

: Added portion. : Deleted portion.

LCD Type	LCD Type SH for TRV230/TRV330				LCD Type SO for TRV230/TRV330			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
6-18		A-7074-646-A	PD-138 (XS6) BOARD, COMPLETE ************************************	(TRV230/TRV330) (Ref.No.;20000Series)				
6-19		A-7074-674-A	PD-139 (Z12) BOARD, COMPLETE ************************************	(TRV530)		A-7074-674-A	PD-139 (Z12) BOARD, COMPLETE ************************************	(TRV530)
						A-7074-786-A	PD-139 BOARD, COMPLETE ************************************	(TRV230/TRV330)
				(Ref.No.;20000Series)				(Ref.No.;20000Series)
			< CAPACITOR >				< CAPACITOR >	
					C5516	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	(TRV230/TRV330)
	C5516	1-162-927-11	CERAMIC CHIP 100PF 5% 50V		C5516	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	(TRV530)

☞ : Added portion. ▨ : Changed portion. ☛: Deleted portion.

LCD Type	LCD Type SH for TRV230/TRV330				LCD Type SO for TRV230/TRV330			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
6-20			< IC >				< IC >	
					IC5502	8-752-407-33	IC CXD3512R-T4	(TRV230/TRV330)
	IC5502	8-752-409-15	IC CXD3516R-T4		IC5502	8-752-409-15	IC CXD3516R-T4	(TRV530)
			< COIL >				< COIL >	
	L5505	1-412-949-21	INDUCTOR 6.8uH		L5505	1-412-949-21	INDUCTOR 6.8uH	(TRV530)
					L5505	1-412-956-21	INDUCTOR 27uH	(TRV230/TRV330)
			< RESISTOR >				< RESISTOR >	
	R5503	1-218-893-11	METAL CHIP 82K 0.5% 1/16W		R5503	1-218-893-11	METAL CHIP 82K 0.5% 1/16W	(TRV530)
					R5503	1-218-895-11	METAL CHIP 100K 0.5% 1/16W	(TRV230/TRV330)
					R5553	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV230/TRV330)
	R5553	1-216-841-11	METAL CHIP 47K 5% 1/16W		R5553	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV530)
					R5614	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV230/TRV330)
	R5614	1-216-835-11	METAL CHIP 15K 5% 1/16W		R5614	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV530)
6-21		A-7096-436-A	VC-254 (BNA) BOARD, COMPLETE	(SERVICE)(TRV230)		A-7096-436-B	VC-254 (BNS) BOARD, COMPLETE	(SERVICE)(TRV230)
			**************************************				**************************************	
		A-7096-438-A	VC-254 (BFNA) BOARD, COMPLETE	(SERVICE)(TRV330)		A-7096-438-B	VC-254 (BFNS) BOARD, COMPLETE	(SERVICE)(TRV330)
			**************************************				**************************************	
				(Ref.No.;10000Series)				(Ref.No.;10000Series)
			< CAPACITOR >				< CAPACITOR >	
	C1328	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV230/TRV330)				
6-22	C1342	1-165-319-11	CERAMIC CHIP 0.1uF 50V	(TRV230/TRV330)				
	C1355	1-164-505-11	CERAMIC CHIP 2.2uF 16V	(TRV230/TRV330)				
6-25			< DIODE >				< DIODE >	
	D1301	8-719-078-02	DIODE 1SS357(T3SONY1)	(TRV230/TRV330)				
	D1305	8-719-078-02	DIODE 1SS357(T3SONY1)	(TRV230/TRV330)				
			< TRANSISTOR >				< TRANSISTOR >	
	Q1324	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	(TRV230/TRV330)				
	Q1330	8-729-054-49	TRANSISTOR UP04401008S0	(TRV230/TRV330)				

☛: Deleted portion.

LCD Type	LCD Type SH for TRV230/TRV330				LCD Type SO for TRV230/TRV330			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
			< RESISTOR >				< RESISTOR >	
6-28	R1335	1-218-977-11	RES-CHIP 100K	5% 1/16W (TRV230/TRV330)				
	R1337	1-218-977-11	RES-CHIP 100K	5% 1/16W (TRV230/TRV330)				
	R1341	1-218-961-11	RES-CHIP 4.7K	5% 1/16W (TRV230/TRV330)				
	R1342	1-208-943-11	METAL CHIP 220K	0.5% 1/16W (TRV230/TRV330)				
	R1343	1-208-931-11	METAL CHIP 68K	0.5% 1/16W (TRV230/TRV330)				
	R1370	1-208-709-11	METAL CHIP 12K	0.5% 1/16W (TRV230/TRV330)				
	R1370	1-208-909-11	METAL CHIP 8.2K	0.5% 1/16W (TRV530)	R1370	1-208-909-11	METAL CHIP 8.2K	0.5% 1/16W

☞ : Added portion. ☞ : Changed portion.

Page	Before change				After change			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
6-32E		3-066-326-01	SPVD-004 (TRV330:US,CND,E,HK,KR,JE,BR/ TRV530:US,CND,E,HK,KR,JE,AR)			3-066-326-01	SPVD-004 (TRV330:E,HK,KR,JE,BR/TRV530:E,HK,KR,JE,AR)	
						3-066-677-01	SPVD-004 (I) (TRV330:US,CND/TRV530:US,CND)	

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DCR-TRV230/TRV330/TRV530

RMT-814

SONY

SERVICE MANUAL

Ver 1.2 2005. 06

US Model
Canadian Model
E Model
Hong Kong Model
Korea Model
DCR-TRV230/TRV330/TRV530
Tourist Model
DCR-TRV330/TRV530
Argentina Model
DCR-TRV230/TRV530
Brazilian Model
DCR-TRV330

SUPPLEMENT-2

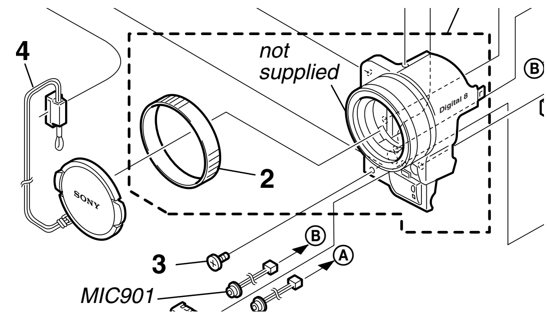
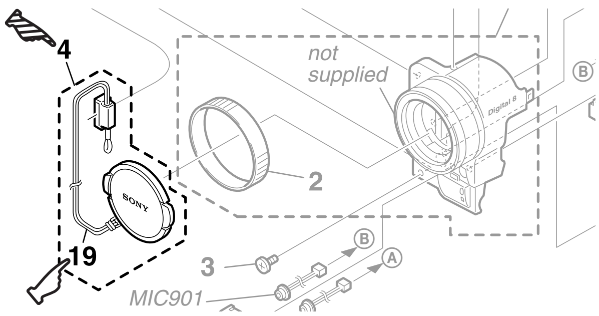
File this supplement-2 with the service manual.

- Change of repair parts list

6. REPAIR PARTS LIST

6-1. EXPLODED VIEWS

▨ : Changed portion ☞ : Added portion

Page	Before change	After change
6-1	**6-1-1. OVERALL SECTION**  4 not supplied Digital 8 B 2 SONY 3 B A MIC901 Ref. No. Part No. Description — ——— ———	 4 not supplied Digital 8 B 2 SONY 19 3 B A MIC901 Ref. No. Part No. Description 19 3-979-194-12 STRING, CAP ☞
6-3	**6-1-3. CABINET (L) SECTION-2** 102 3-052-815-01 BELT (ES), GRIP	102 3-052-815-02 BELT (ES), GRIP ▨
6-8	**6-1-8. LENS, EVF SECTION** 352 X-3951-248-1 IRIS FLEXIBLE, ASSY 361 X-3951-165-1 HINGE ASSY, VF	352 1-758-555-11 ▨ IRIS (IR700) ▨ 361 X-3951-165-4 ▨ HINGE ASSY, VF

DCR-TRV230/TRV330/TRV530
9-929-859-82

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6-2. ELECTRICAL PARTS LIST

☞ : Added portion

Page	Before change			After change		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
6-32E			ACCESSORIES ************			ACCESSORIES ************
					3-979-194-12	STRING, CAP ☜

Revision History

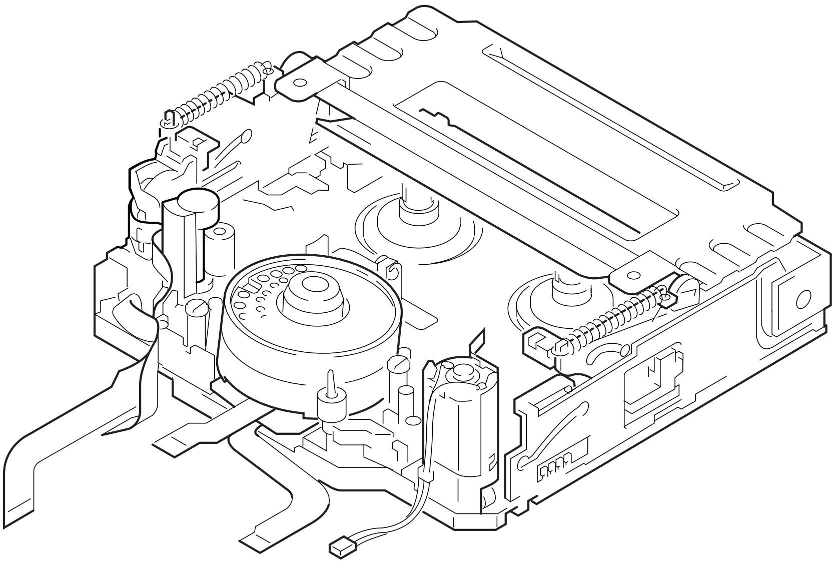
Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2000.12	Official Release	—	—
1.1	2001.07	Supplement-1	• LCD panel (2.5-inch type) is changed. As the result the following items are changed at the same time. 1. Cold cathode fluorescent tube is changed 2. PD-138 board is changed to PD-139 board 3. VC-254 board is changed 4. Adjustment method is changed • CD-ROM (SPVD-004) is changed	No
1.2	2005.06	Supplement-2	• Change of repair parts list	No

8mm Video MECHANICAL ADJUSTMENT MANUAL IX

Ver 1.0 2000. 12

M2000 MECHANISM

Please use this manual with the service manual of the respective models.



Digital 8 MECHANISM DECK

SONY®

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1. Preparations for Check, Adjustment and Replacement of Mechanism Block

Before Replacement, Check or Adjustment

- Refer to the “DISASSEMBLY” section of the SERVICE MANUAL of the respective models for details of removing cabinets and printed wiring boards.
- When checking a mechanism ir making any adjustment to the mechanism or replacing mechanical parts, be sure to use the Mode Selector II and select the appropriate status of the mechanical deck such that the mechanical status is suitable for the desired work. Refer to section “1-2. Mode Selector II Operating Procedure” for details on how to enter the mode shown in a rectangle ☐ mode in the sequent sections of this manual.

* Assemble and adjust the parts in the USE mode if any mode is not specified in this manual.

1-1. Service Jigs and Tools

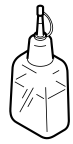
Ref. No.	Name		Part code	Jig inscription	Used for
J-1	Cleaning fluid		Y-2031-001-0		
J-2	Wiping cloth		7-741-900-53		
J-3	Super-fine applicator (made by Nippon Applicator (P752D))				
J-4	Head eraser		commercially available		Tape path
J-5	Mirror (small oval type)		J-6080-840-A	GD-2038	Tape path
J-6	Alignment tape	NTSC : WR5-1NP	8-967-995-02		For tracking adjustment
		PAL : WR5-1CP	8-967-995-07		
J-7	FWD/RVS take-up torque cassette		J-6080-824-A	GD-2086	
J-8	Tape path screwdriver		J-6082-026-A		For tape guide adjustment
J-9	Adjustment remote commander (RM-95 upgrated)		J-6082-053-B		Tape path (for setting the path mode)(Note)
J-10	MD process table		J-6082-166-A		
J-11	Floil grease		7-662-001-39		
J-12	Torque screwdriver		J-9049-330-A		
J-13	Mode Selector II		J-6082-282-B		
J-14	Mode Selector II conversion board		J-6082-516-A		
J-15	Mode Selector II ROM, Ver 1.6		J-6082-314-E		
J-16	Thickness gauge		9-911-053-00		For capstan azimuth adjustment, LS cam plate position adjustment

Other required equipment:

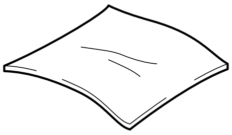
- Oscilloscope
- Analog tester (20 kΩ)

Note: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

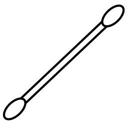
J-1



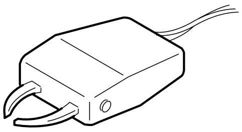
J-2



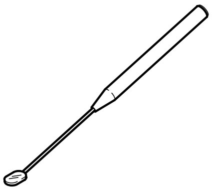
J-3



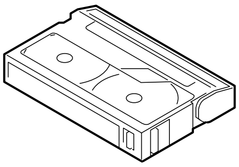
J-4



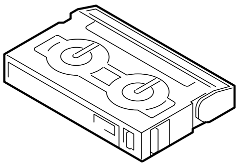
J-5



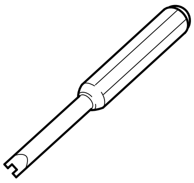
J-6



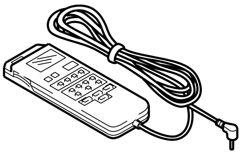
J-7



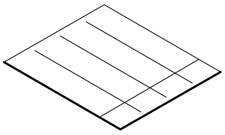
J-8



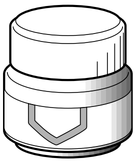
J-9



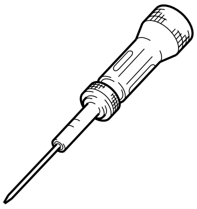
J-10



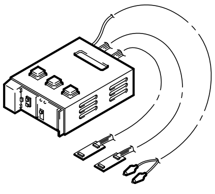
J-11



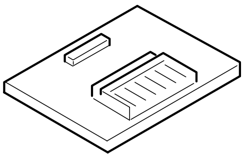
J-12



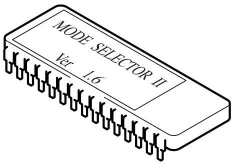
J-13



J-14



J-15


MODE SELECTOR II
Ver 1.6

J-16

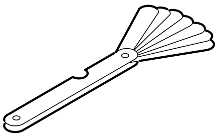


Fig. 1-1.

1-2. Mode Selector II Operating Procedure

1-2-1. Introduction

The Mode Selector II is a mechanism drive tool that assists maintenance work of the various mechanism decks. It has the following functions.

1. Manual Test

In this mode, the motor of the mechanism deck is powered only during the period while the switch is turned on manually. Using the Manual Test, the operator can freely control the motor of the mechanism deck.

2. Step Test

In this mode, the motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information. The Step Test is used to confirm a series of movements of the mechanism deck.

3. Auto Test

The Mode Selector II stores the status transition table in its memory as data indicating the respective modes of the mechanism deck. The status transition table can be used to confirm whether a mechanism deck is operating normally or has abnormality from a series of movements of a mechanism deck. If an abnormal status transition is detected during operation, the "NG" indication appears and the mechanism stops moving.

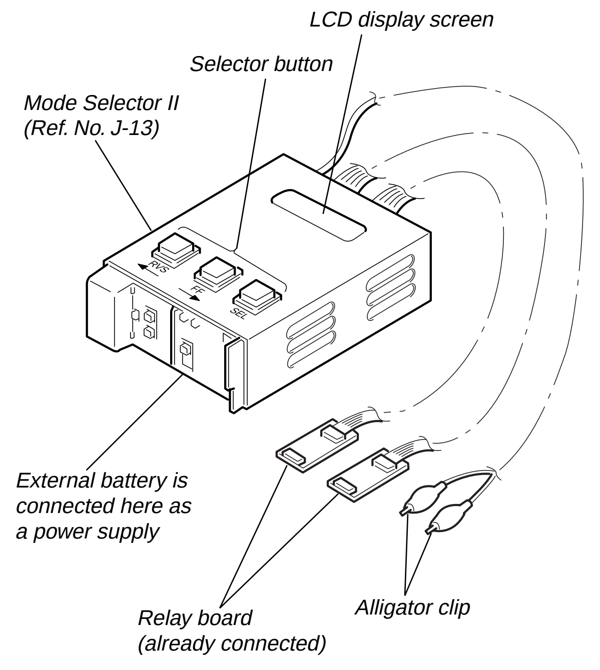

LCD display screen
Selector button
Mode Selector II
(Ref. No. J-13)
External battery is
connected here as
a power supply
Relay board
(already connected)
Alligator clip

Fig. 1-2.

Mode Selector II (J-6082-282-B) connection diagram

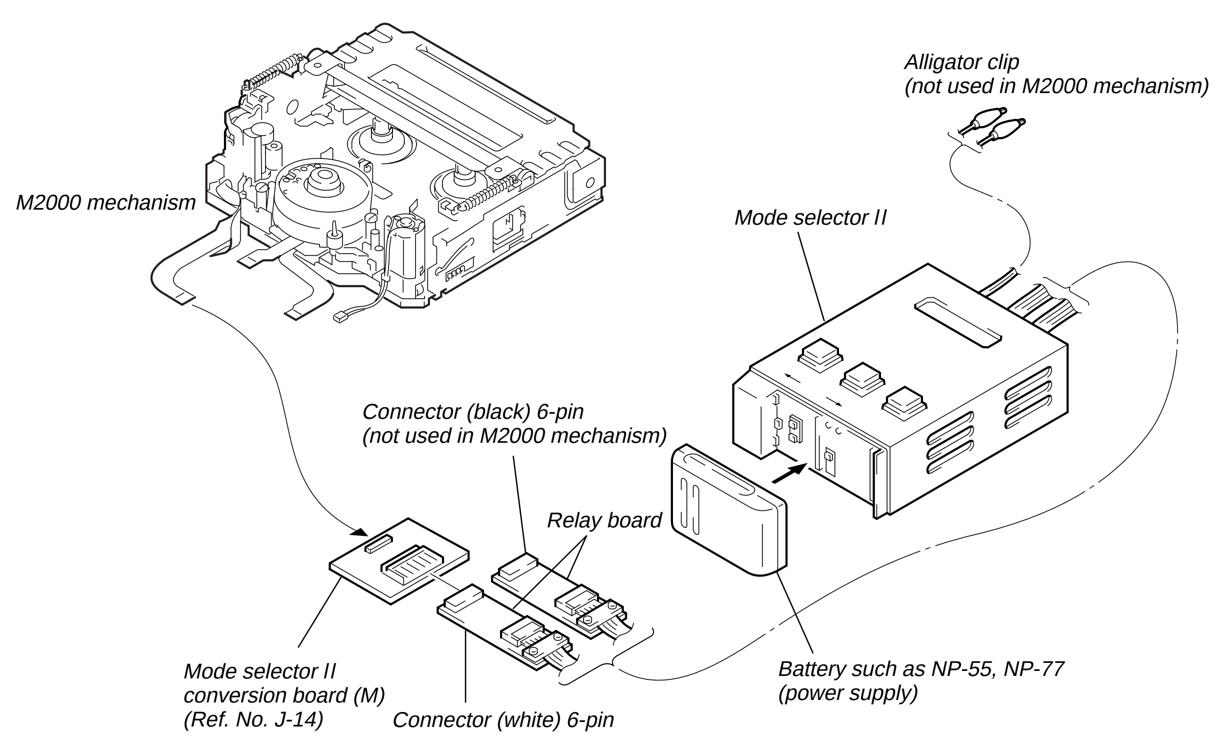
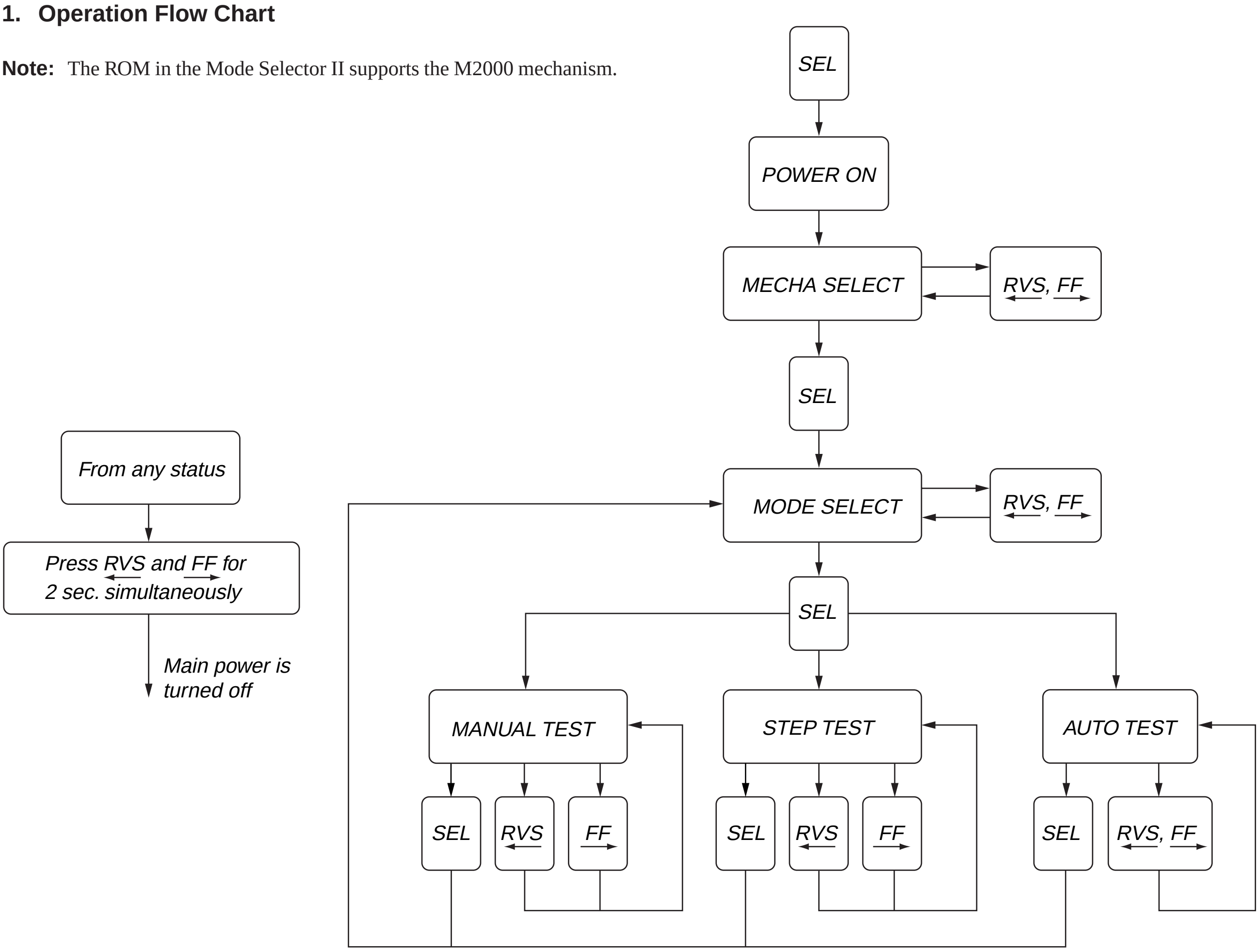

Alligator clip
(not used in M2000 mechanism)
M2000 mechanism
Mode selector II
Connector (black) 6-pin
(not used in M2000 mechanism)
Relay board
Mode selector II
conversion board (M)
(Ref. No. J-14)
Connector (white) 6-pin
Battery such as NP-55, NP-77
(power supply)

Fig. 1-3.

1-2-2. Operation

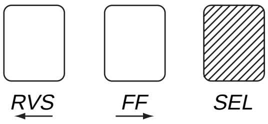
1. Operation Flow Chart

Note: The ROM in the Mode Selector II supports the M2000 mechanism.


SEL
POWER ON
MECHA SELECT
RVS, FF
SEL
MODE SELECT
RVS, FF
SEL
MANUAL TEST
STEP TEST
AUTO TEST
SEL
RVS
FF
SEL
RVS
FF
SEL
RVS, FF
From any status
Press RVS and FF for
2 sec. simultaneously
Main power is
turned off

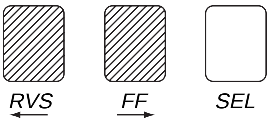
2. Mode Selector II Power On

Turn on the main power of the Mode Selector II as follows.
Press the SEL button.



3. Mode Selector II Power Off

Turn off the main power of the Mode Selector II as follows.
Press the RVS and FF buttons at the same time for 2 seconds or longer while the power is on.



4. Mecha Select

When the main power is turned on, the MECHA SELECT display appears on the LCD screen. Select the desired mechanism name using the RVS and FF buttons. Selection is complete when the SEL button is pressed. (Fig. A shows the B mechanism.)

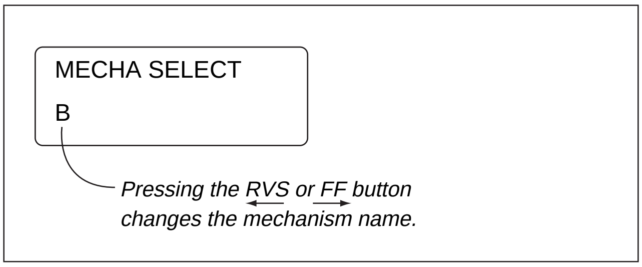

MECHA SELECT
B
Pressing the RVS or FF button changes the mechanism name.

Fig. a

5. Test Type Select

Using the RVS and FF buttons, select a desired test type from the three types of “MANUAL”, “STEP” and “AUTO”. Selection is complete when the SEL button is pressed.

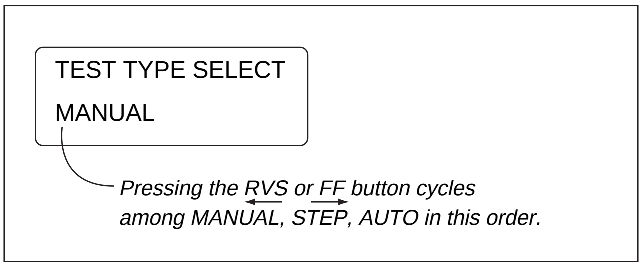

TEST TYPE SELECT
MANUAL
Pressing the RVS or FF button cycles among MANUAL, STEP, AUTO in this order.

Fig. b

6. Manual Test

In this test, the motor of the mechanism deck is turned on only during the period while the RVS or FF button is pressed manually.

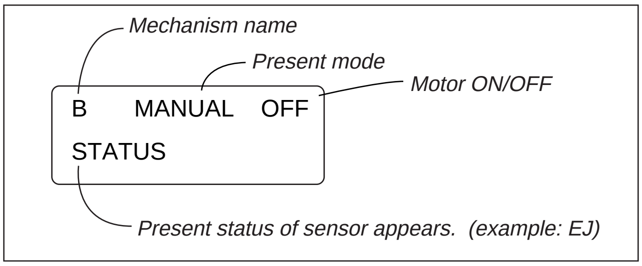

Mechanism name
Present mode
Motor ON/OFF
B MANUAL OFF
STATUS
Present status of sensor appears. (example: EJ)

Fig. c

7. Step Test

In this test, the direction of motor movement is determined by the RVS and FF buttons. The motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information.

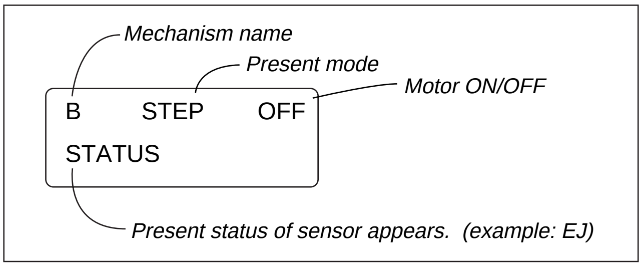

Mechanism name
Present mode
Motor ON/OFF
B STEP OFF
STATUS
Present status of sensor appears. (example: EJ)

Fig. d

8. Auto Test

In this test, the mechanism deck is tested as to whether it performs a series of movements correctly in accordance with the operation sequence that is memorized earlier for each type of deck, by checking the output signals from sensors with the stored memory. Turning on the RVS or FF button performs the same operation.

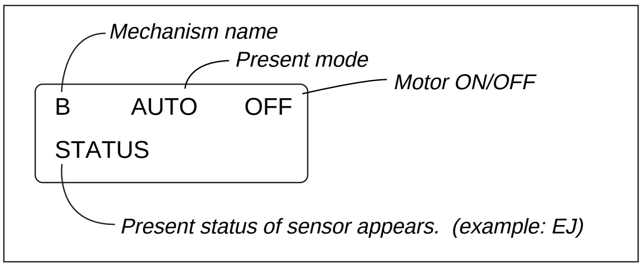

Mechanism name
Present mode
Motor ON/OFF
B AUTO OFF
STATUS
Present status of sensor appears. (example: EJ)

Fig. e

1-2-3. Mechanism Status (Position) Transition Table Using Mode Selector II

After selecting a mechanism deck, select either the MANUAL or STEP test (not AUTO) using the Mode Selector II. The desired mechanism status (position) can be specified by pressing the $\underleftarrow{\text{RVS}}$ or $\underrightarrow{\text{FF}}$ button. (The selected status appears on STATUS.)

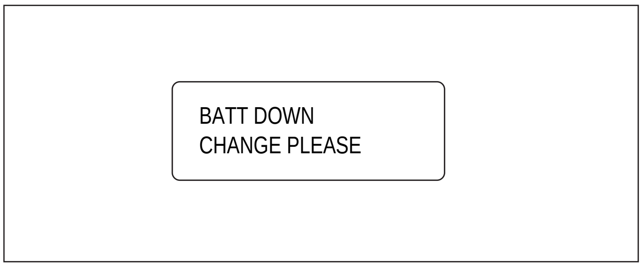
EJ↔USE↔LOAD↔STOP↔TURN↔RP↔REW

MD name **Code**				**M2000 Mechanism**
A	B	C		
1	0	0	1	EJ
1	1	0	2	USE
0	1	0	3	LOAD
0	1	1	4	STOP
0	0	1	5	TURN
0	0	0	6	RP
1	0	1	7	REW

[0 is common and short.
1 is common and open.]

1-2-4. Battery Alarm Indication

When the level of the battery used to supply power to this system decreases, this display appears asynchronously. When this happens, all operations are disabled and the battery must be replaced.



BATT DOWN
CHANGE PLEASE

Fig. f

2. Periodic Inspection and Maintenance

- Be sure to perform the following maintenance and inspection so that the machine delivers its full performance and functions, and to protect the machine and tape. Also, perform the following maintenance items after completing the repair work, regardless of the number of hours the machine has been operated by the user.

2-1. Rotary Drum Cleaning

1) Press a wiping cloth (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly against the rotary drum. Rotate the upper drum with a super-fine applicator slowly in the counter-clockwise direction to clean the rotary drum.

Caution: Never rotate the rotary drum by turning on the main power of the motor or rotate it in the clockwise direction. Never move the cloth vertically against the head tip, as this will surely damage the video head; the video head must not be cleaned by any other different methods.

2-2. Tape Path System Cleaning

(Refer to Fig. 2-1.)

1) Set the EJECT state. Clean the tape running path (TG1, 2, 3, 4, 5, 6 and 7, pinch roller and capstan shaft) and lower drum with a super-fine applicator (Ref. No. J-3) moistened with cleaning fluid.

Note 1: Be careful not to allow oil or grease of the various link mechanisms to get on the super-fine applicator (Ref. No. J-3).

Note 2: Once the super-fine applicator has been moistened with alcohol, do not use it to clean other mechanical parts such as the tape guide. However, the pinch roller is cleaned with alcohol.

Note 3: When cleaning the capstan shaft, be carefull not to move the oil seal. If the oil seal is moved, oil will leak.

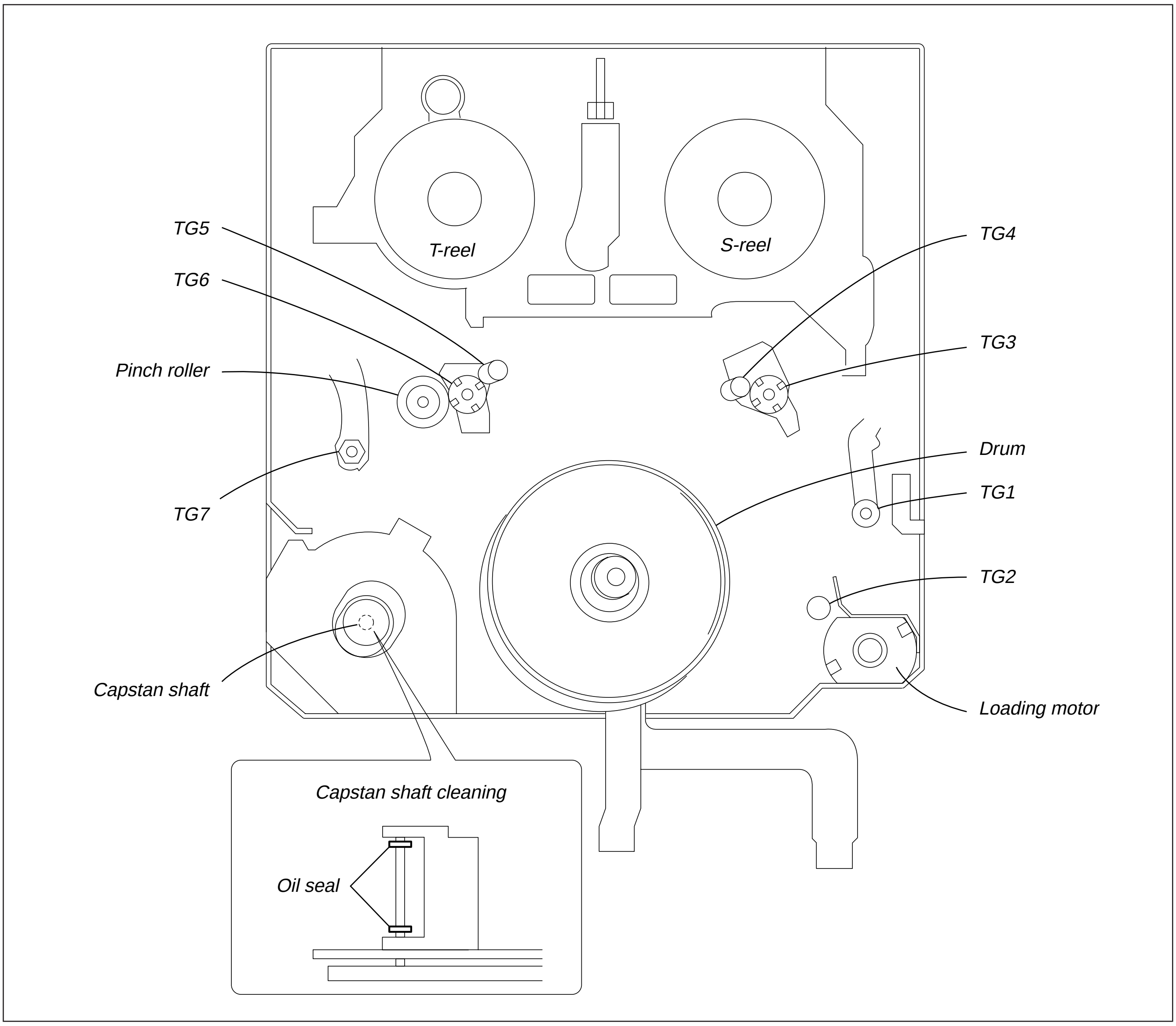


Fig. 2-1

2-3. Periodic Inspection List

Maintenance and inspection item		Operating hours (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Tape running surface cleaning	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
	Rotary drum cleaning and degaussing	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
Drive mechanism	Timing belt	—	☆	—	☆	—	☆	—	☆	—	☆	
	Capstan shaft	—	☆	—	☆	—	☆	—	☆	—	☆	Never attach oil to the tape running path during periodic inspection.
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back-tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD/RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○: Cleaning, ☆: Check

Note: When the machine is overhauled, replace the parts referring to the above list.

2-4. Appling Oil and Grease

When replacing or assembling the parts, use oil and grease while referring to the following.

On Oil

- Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)
  Oil: Part No. 7-661-018-18
  (Mitsubishi diamond oil hydro fluid NT-68)
- The oil used for bearings must not contain any dust or other materials, otherwise excessive abrasion and seizure of the bearing could occur.
- A drop of oil means the amount of oil as shown in the illustration in the right, which is the amount that is attracted to the top of a rod of 2 mm diameter.

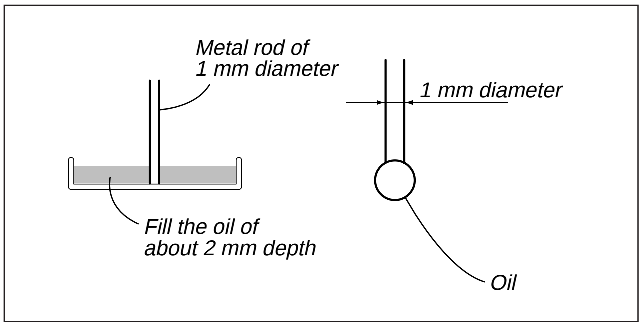


Fig. 2-2

On Grease

- Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)
  Floil grease: Part No. 7-662-001-39
- Be sure to use grease into which dust is not mixed.
- The amount of grease is 1 to 1.5 mm diameter in length.

3. Before Replacement, Check or Adjustment

3-1. Phase Adjustment

The phase adjustment of this mechanism block has been adjusted by using the in-phase markings shown in the following figure.
When replacing or assembling the parts, check the phase.

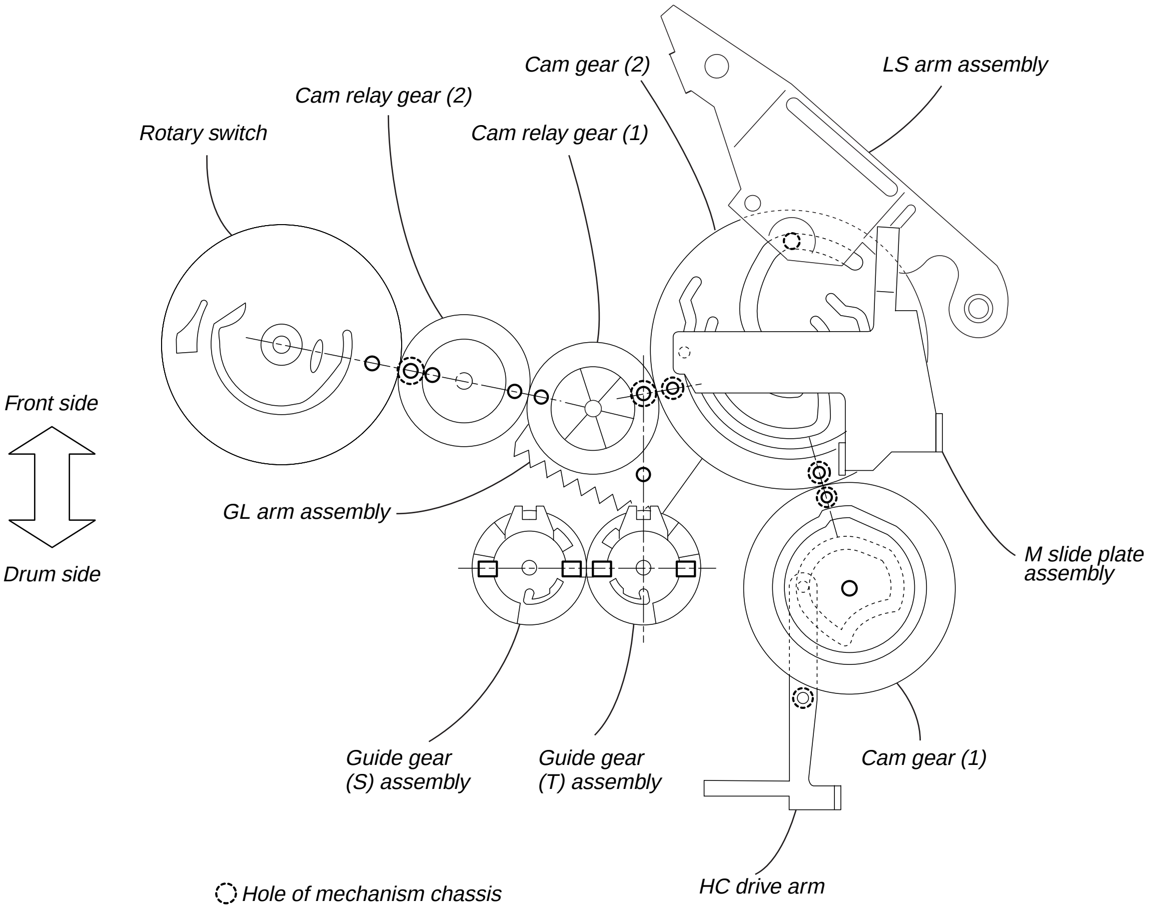

Cam gear (2)
LS arm assembly
Cam relay gear (2)
Rotary switch
Cam relay gear (1)
Front side
Drum side
GL arm assembly
M slide plate assembly
Guide gear (S) assembly
Guide gear (T) assembly
Cam gear (1)
HC drive arm
Hole of mechanism chassis

Fig. 3-1.

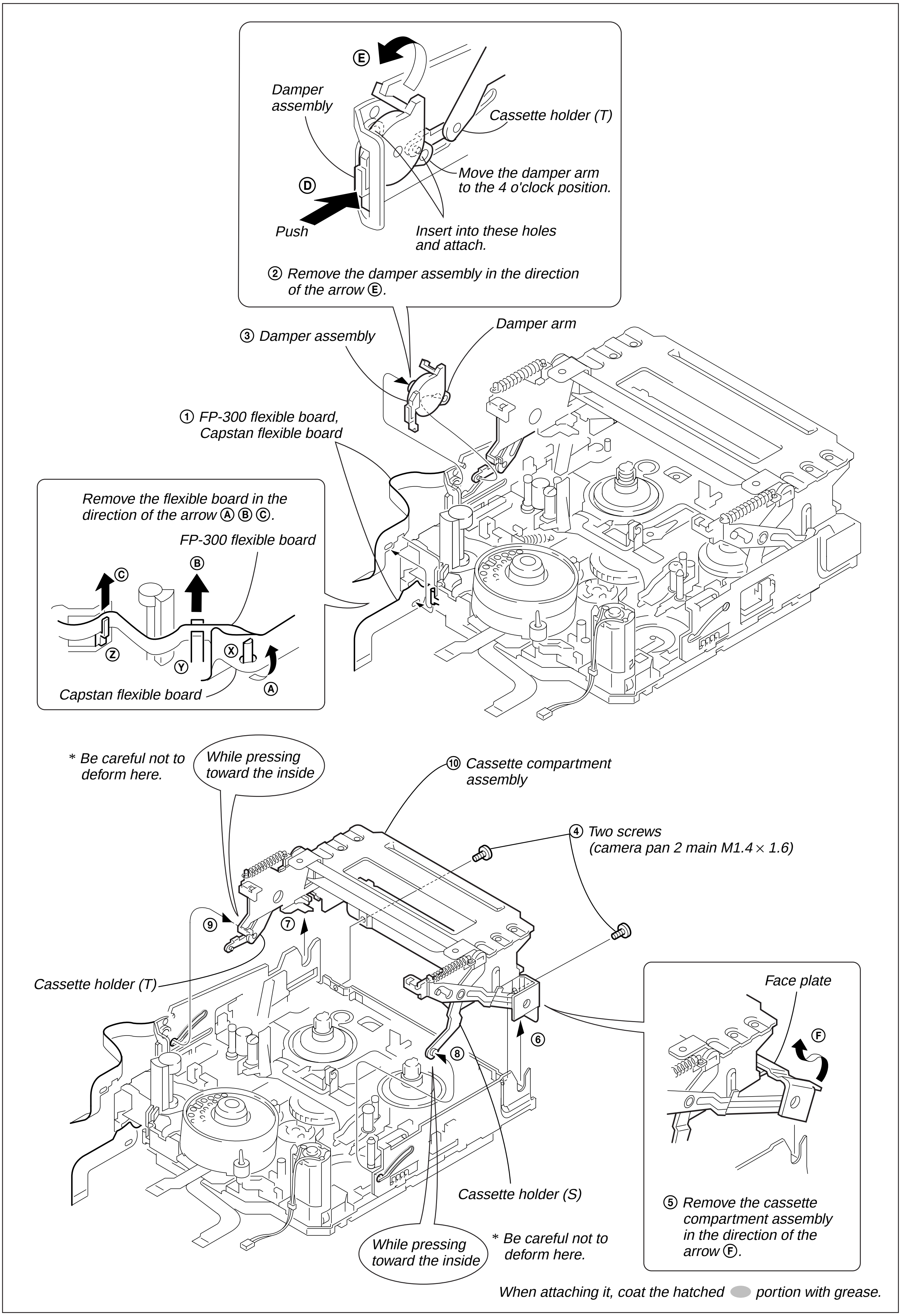
3-2. Cassette compartment assembly

1. Removal procedure

1) Set the EJ mode to move up the cassette compartment assembly ⑩.
2) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders Ⓧ, Ⓨ and Ⓩ in the directions of the arrows Ⓐ, Ⓑ and Ⓒ.
3) Push the damper assembly ③ in the directions of the arrows Ⓓ and Ⓔ and remove it from the notch of the LS chassis block assembly.
4) Remove the two screws (camera pan2 main M1.4 × 1.6) ④.
5) With the cassette compartment assembly ⑩ half opened, move the face plate in the direction of the arrow Ⓕ and remove it from the grooves ⑥ and ⑦ on the LS chassis block assembly.
6) Remove the cassette holder (S) ⑧ and cassette holder (T) ⑨ of the cassette compartment assembly ⑩ from the groove on the LS chassis block assembly.

2. Attachment procedure

1) Set the USE mode.
2) Insert the cassette holder (S) ⑧ of the cassette compartment assembly ⑩ and cassette holder (T) ⑨ into the grooves on both sides of the LS chassis block assembly.
3) While moving down the cassette compartment assembly ⑩, lift up the face plate in the direction of the arrow Ⓕ and keep this status. Then, insert the face plate in the grooves ⑥ and ⑦ on the LS chassis block assembly.
4) Tighten the two screws (camera pan2 main M1.4×1.6) ④.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
5) Move the damper arm of the damper assembly ③ to the 4 o'clock position and insert the damper assembly into the hole on the LS chassis block assembly and the dowel of the cassette holder (T) ⑨.
6) Align the damper assembly ③ with the notch of the LS chassis block assembly and rotate the damper assembly ③ in the opposite direction to the arrow Ⓔ to fix it.


Ⓔ
Damper assembly
Cassette holder (T)
Move the damper arm to the 4 o'clock position.
Ⓓ
Push
Insert into these holes and attach.
Damper arm
FP-300 flexible board
Ⓑ
Ⓒ
Ⓩ
Ⓨ
Ⓧ
Ⓐ
Capstan flexible board
While pressing toward the inside
⑨
⑦
Cassette holder (T)
⑧
⑥
Cassette holder (S)
While pressing toward the inside
Face plate
Ⓕ

① FP-300 flexible board, Capstan flexible board

Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.

② Remove the damper assembly in the direction of the arrow Ⓔ.

③ Damper assembly

④ Two screws (camera pan 2 main M1.4 × 1.6)

⑤ Remove the cassette compartment assembly in the direction of the arrow Ⓕ.

⑩ Cassette compartment assembly

* Be careful not to deform here.

* Be careful not to deform here.

When attaching it, coat the hatched ● portion with grease.

Fig. 3-2.

4. Check, Adjustment and Replacement

Note: For removal procedure of the cabinets, printed wiring boards and other parts, refer to “DISASSEMBLY” of the Service Manual of the respective models.

4-1. Drum Assembly

1. Removal procedure

1) Remove the three screws (drum fitting M1.4 × 2.5) ① fixing the drum and remove the drum.

2. Attachment procedure

1) Align the two reference holes A and B on the rear of the drum with the reference pins A and B of the drum base assembly.
2) Attach the drum with the three screws (drum fitting M1.4 × 2.5) ① in the order of Ⓐ, Ⓑ and Ⓒ.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
3) Clean the drum while referring to 2-1.
4) Adjust the tape path. (Refer to “4. Tape Path Adjustment”.)

Note: Do not touch the outside circumference.

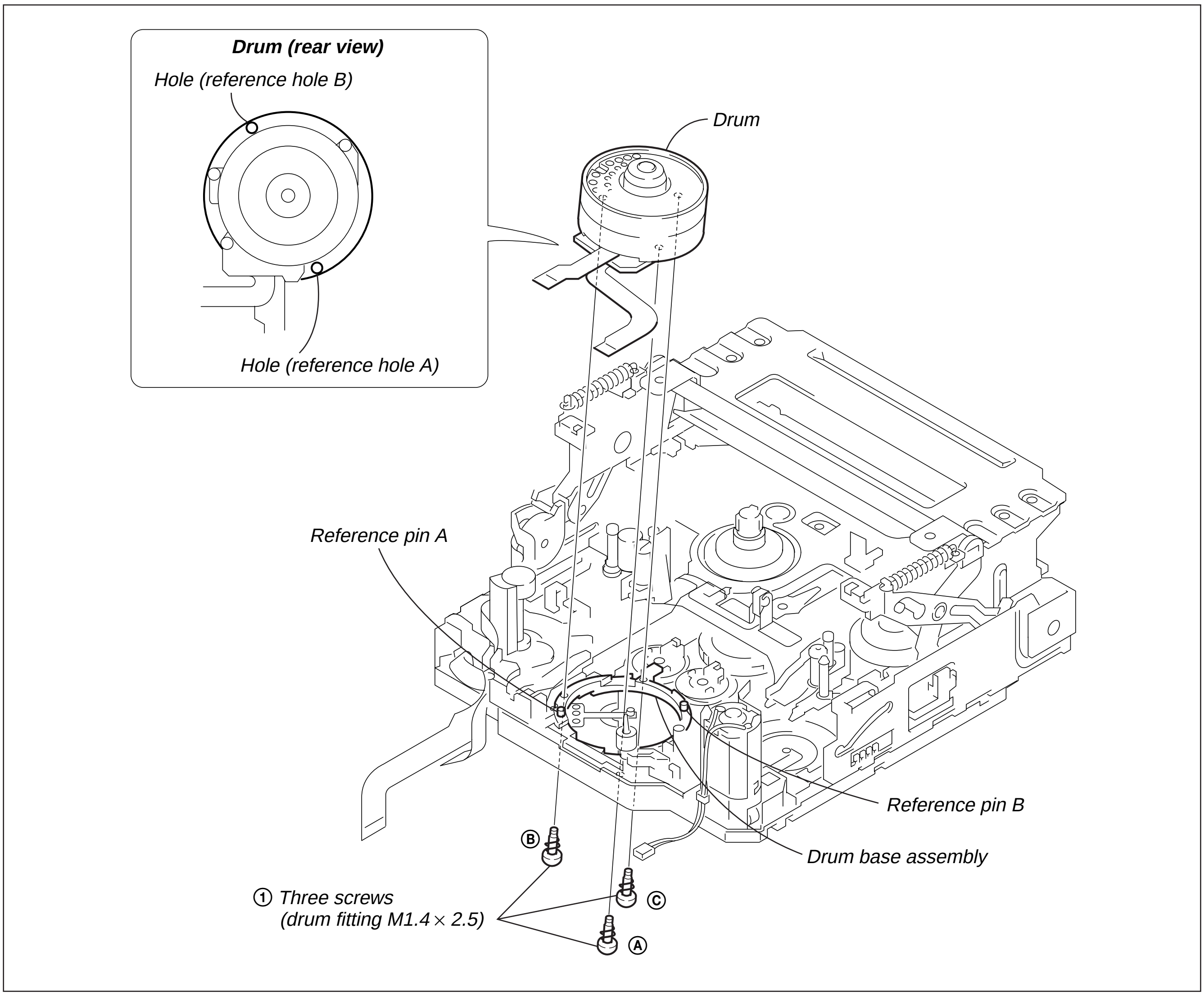

Drum (rear view)
Hole (reference hole B)
Hole (reference hole A)
Drum
Reference pin A
Reference pin B
Drum base assembly
Ⓑ
Ⓒ
Ⓐ
① Three screws (drum fitting M1.4 × 2.5)

Fig. 4-1.

4-2. HCL Arm Assembly, Loading Motor Assembly

1. Removal procedure

1) Hook the HC arm spring in the direction of the arrow Ⓑ.
2) Remove the HCL arm assembly ② from the loading motor assembly ④.
3) Remove the screw (M1.4 × 2.5) ③.
4) Remove the three claws of the loading motor assembly ④ from the mechanism chassis assembly in the direction of the arrow Ⓐ.

2. Attachment procedure

1) Coat the worm shaft and gear of the loading motor assembly ④ with grease.
2) Insert the three claws of the loading motor assembly ④ into the groove on the mechanism chassis assembly.
3) Attach the screw (M1.4 × 2.5) ③.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Check the position of the HCL arm assembly ② and the HC drive arm. Then attach the HCL arm assembly ② to the loading motor assembly ④.
5) Hook the HC arm spring ① on the notch of the loading motor assembly ④.
6) Clean the drum assembly. (Refer to section 2-1.)

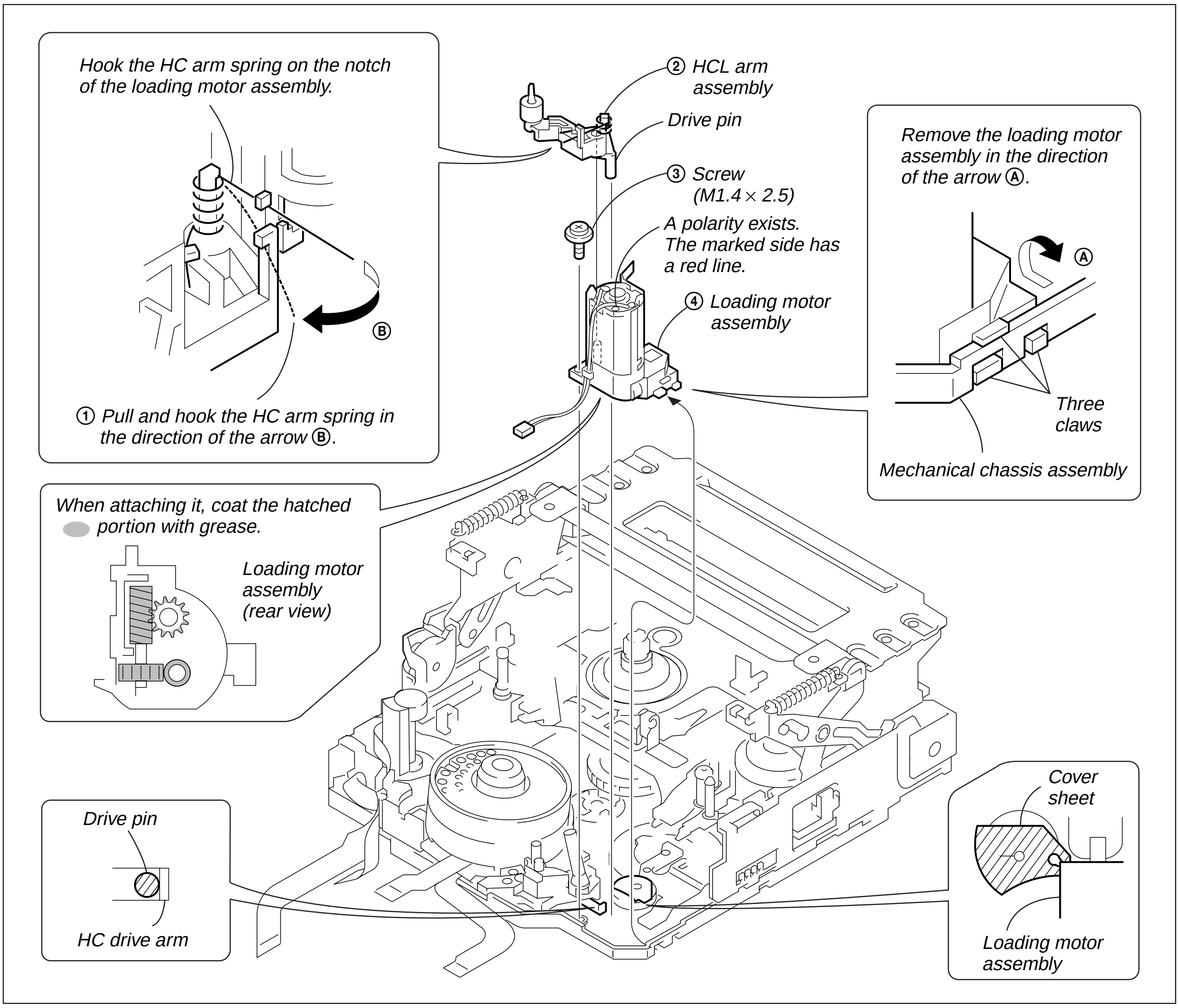

Hook the HC arm spring on the notch of the loading motor assembly.
Ⓑ
① Pull and hook the HC arm spring in the direction of the arrow Ⓑ.
② HCL arm assembly
Drive pin
③ Screw (M1.4 × 2.5)
A polarity exists. The marked side has a red line.
④ Loading motor assembly
Remove the loading motor assembly in the direction of the arrow Ⓐ.
Ⓐ
Three claws
Mechanical chassis assembly
When attaching it, coat the hatched ● portion with grease.
Loading motor assembly (rear view)
Drive pin
HC drive arm
Cover sheet
Loading motor assembly

Fig. 4-2.

4-3. Drum Base Assembly, Drum Earth

1. Removal procedure

1) Remove the capstan flexible board and flexible wiring board (FP-300) from the holders Ⓧ, Ⓨ and Ⓩ in the direction of the arrow.
2) Remove the drum assembly. (Refer to section 4-1.)
3) Remove the screw (M1.4 × 2.5) ②.
4) Remove the claw Ⓓ of the guide rail T2 ③ from the hole Ⓔ of the drum base assembly in the direction of the arrow Ⓕ.
5) Remove the three screws (M1.4 × 2.5) ④.
6) Remove the drum base assembly ⑤ in the direction of the arrow.
7) Remove the screw (screw assy PW M1.7 × 2.6) ⑥.
8) Remove the drum earth ⑦ and earth spacer ⑧.

2. Attachment procedure

1) Attach the ground spacer ⑧ and drum ground ⑦ with the screw (screw assy PW M1.7 × 2.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
2) Align the drum base assembly ⑤ with the reference pin and tighten the three screws (M1.4 × 2.5) ④ in the order of Ⓖ, Ⓗ and Ⓘ.
3) Insert the claw Ⓓ of the guide rail T2③ into the hole Ⓔ of the drum base assembly ⑤ and tighten the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 kgf•cm)
4) Remove the drum assembly. (Refer to 4-1.)
5) Attach the flexible wiring board (FP-300) ① and capstan flexible board to the drum base assembly.
6) Clean the tape running path. (Refer to 2-2.)

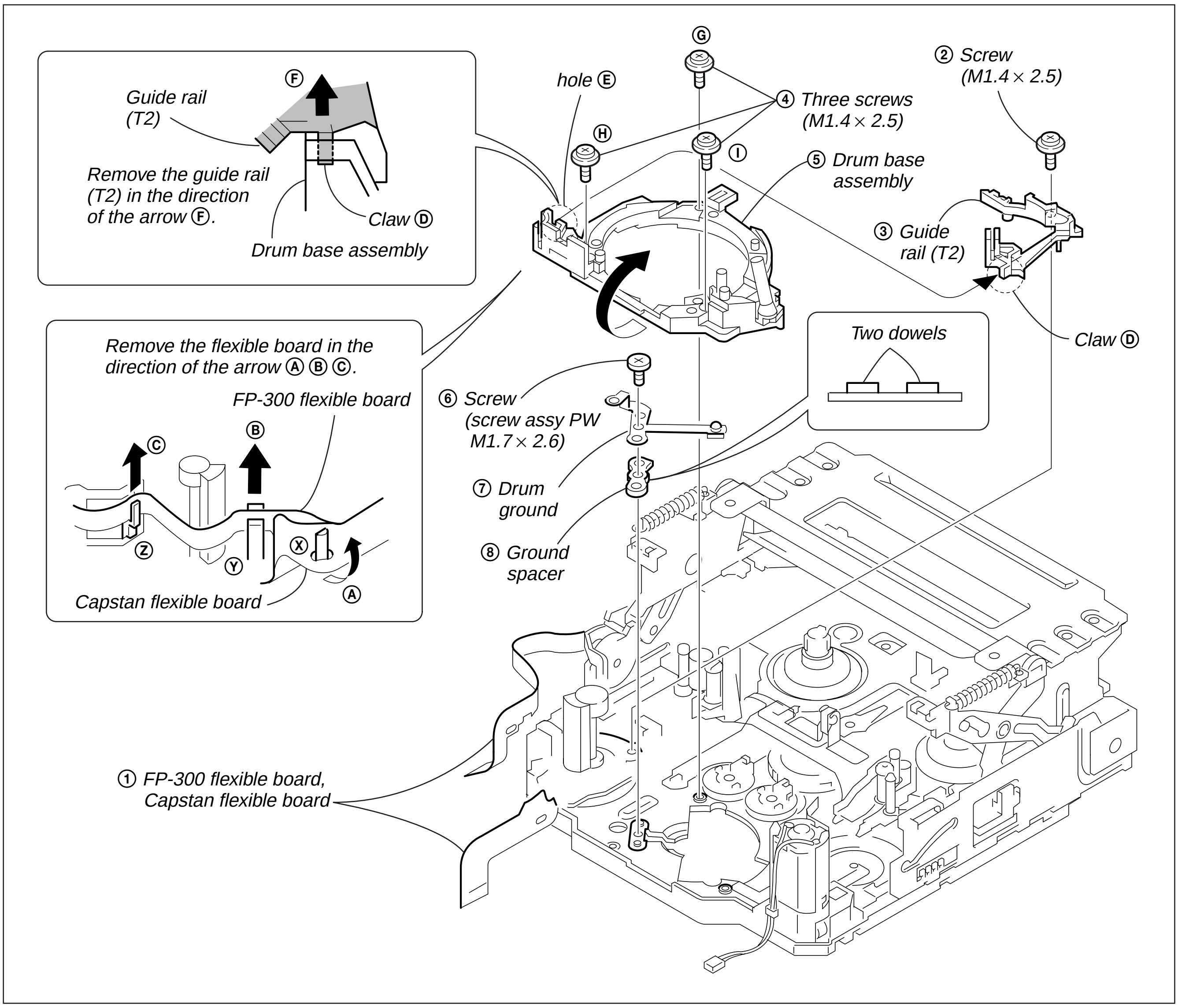

Ⓕ
Guide rail (T2)
Remove the guide rail (T2) in the direction of the arrow Ⓕ.
Claw Ⓓ
Drum base assembly
Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.
FP-300 flexible board
Ⓒ
Ⓑ
Ⓩ
Ⓨ
Ⓧ
Ⓐ
Capstan flexible board
Ⓖ
hole Ⓔ
Ⓗ
Ⓘ
④ Three screws (M1.4 × 2.5)
② Screw (M1.4 × 2.5)
⑤ Drum base assembly
③ Guide rail (T2)
Claw Ⓓ
Two dowels
⑥ Screw (screw assy PW M1.7 × 2.6)
⑦ Drum ground
⑧ Ground spacer
① FP-300 flexible board, Capstan flexible board

Fig. 4-3.

4-4. Guide Rail T2, Capstan Motor

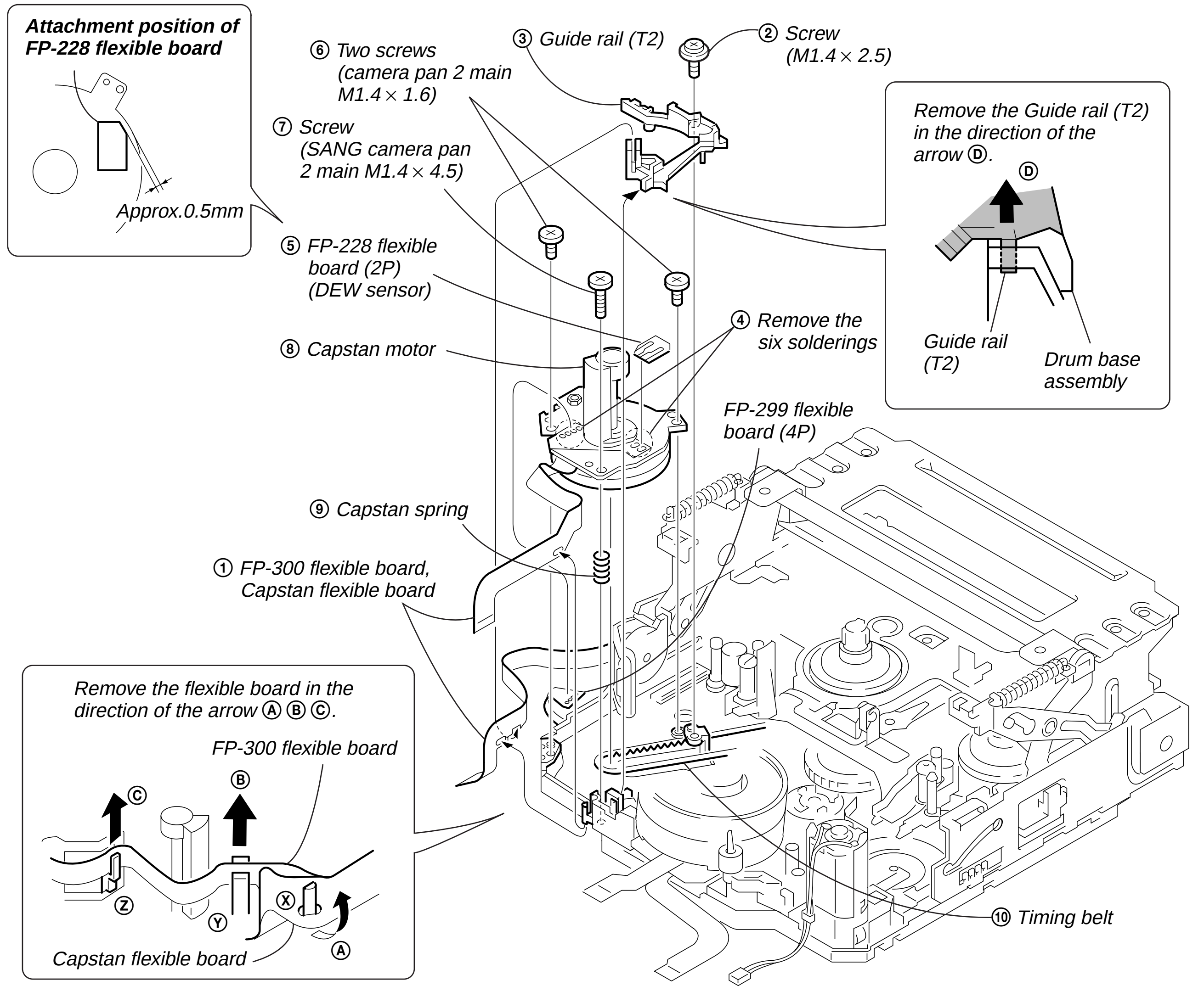
1. Removal procedure

1) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders Ⓧ, Ⓨ and Ⓩ in the directions of the arrows Ⓐ, Ⓑ and Ⓒ.
2) Remove the screw (M1.4 × 2.5) ②.
3) Remove the claw of the guide rail T2 ③ from the hole on the drum base assembly in the direction of the arrow Ⓓ.
4) Remove the six solderings ④.
5) Remove the FP-228 flexible wiring board (2P) (DEW sensor) ⑤.
6) Remove the two screws (camera pan2 main M1.4 × 1.6) ⑥ and the screw (SANG camera pan2 main M1.4 × 4.5) ⑦.
7) Remove the capstan motor ⑧.
8) Remove the capstan spring ⑨ (be careful not to drop the capstan spring) and timing belt ⑩.

2. Attachment procedure

1) Hook the timing belt ⑩ on the gear of the capstan motor ⑧, attach the capstan motor while aligning it with the reference boss of the mechanism chassis assembly.
2) Attach the screw (SANG camera pan2 M1.4 × 4.5) ⑦ and capstan spring ⑨. (temporally attachment)
3) Attach the two screws (camera pan2 M1.4 × 1.6) ⑥.
Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the six solderings ④ to the FP-228 flexible wiring board ⑤ (2P) (DEW sensor) and the FP-299 flexible wiring board (4P).
5) Insert the guide rail T2 ③ into the hole on the drum base assembly and tighten the screw (M1.4 × 2.5) ②.
Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
6) Attach the capstan flexible board and the flexible wiring board (FP-300) ① to the holders Ⓧ, Ⓨ and Ⓩ.
7) Adjust the height of the capstan motor using the thickness gauge (Ref. No. J-16). (Refer to 5-3.)

Note: Be careful not to touch the center of the capstan motor ⑩ shaft and the FP-228 flexible wiring board (DEW sensor) with soldering iron or other tool.


Attachment position of FP-228 flexible board
Approx.0.5mm
⑥ Two screws (camera pan 2 main M1.4 × 1.6)
③ Guide rail (T2)
② Screw (M1.4 × 2.5)
⑦ Screw (SANG camera pan 2 main M1.4 × 4.5)
Remove the Guide rail (T2) in the direction of the arrow Ⓓ.
Ⓓ
Guide rail (T2)
Drum base assembly
⑤ FP-228 flexible board (2P) (DEW sensor)
④ Remove the six solderings
⑧ Capstan motor
FP-299 flexible board (4P)
⑨ Capstan spring
① FP-300 flexible board, Capstan flexible board
Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.
FP-300 flexible board
Ⓒ
Ⓑ
Ⓩ
Ⓨ
Ⓧ
Ⓐ
Capstan flexible board
⑩ Timing belt

Note: *Any foreign materials must not be attached to the capstan motor.*

Fig. 4-4.

4-5. Blind Plate, Lock Guide

1. Removal procedure

1) Remove the diode D001 (tape LED) ① from the notch of the plate ④.
2) Remove the flexible wiring board ② (FP-301) from T-shaped portion of the blind plate ④ in the direction of the arrow Ⓐ.
3) Remove the screw (camera pan2 main M1.4 × 1.6) ③.
4) Release the hook on the notches Ⓖ, Ⓓ, Ⓔ and Ⓕ of the blind plate ④ in the direction of the arrow Ⓑ.
5) Remove the reel release lever ⑤ in the direction of the arrow Ⓒ.

2. Attachment procedure

1) Attach the reel release lever ⑤ to the blind plate ④.
2) Hang the notches Ⓖ, Ⓓ, Ⓔ and Ⓕ of the blind plate ④ on the hook.
3) Attach the screw (camera pan2 main M1.4 × 1.6) ③.
Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the flexible wiring board (FP-301) ② to the T-shaped portion of the blind plate ④.
5) Attach the diode (tape LED) ① to the notch of the blind plate ④.

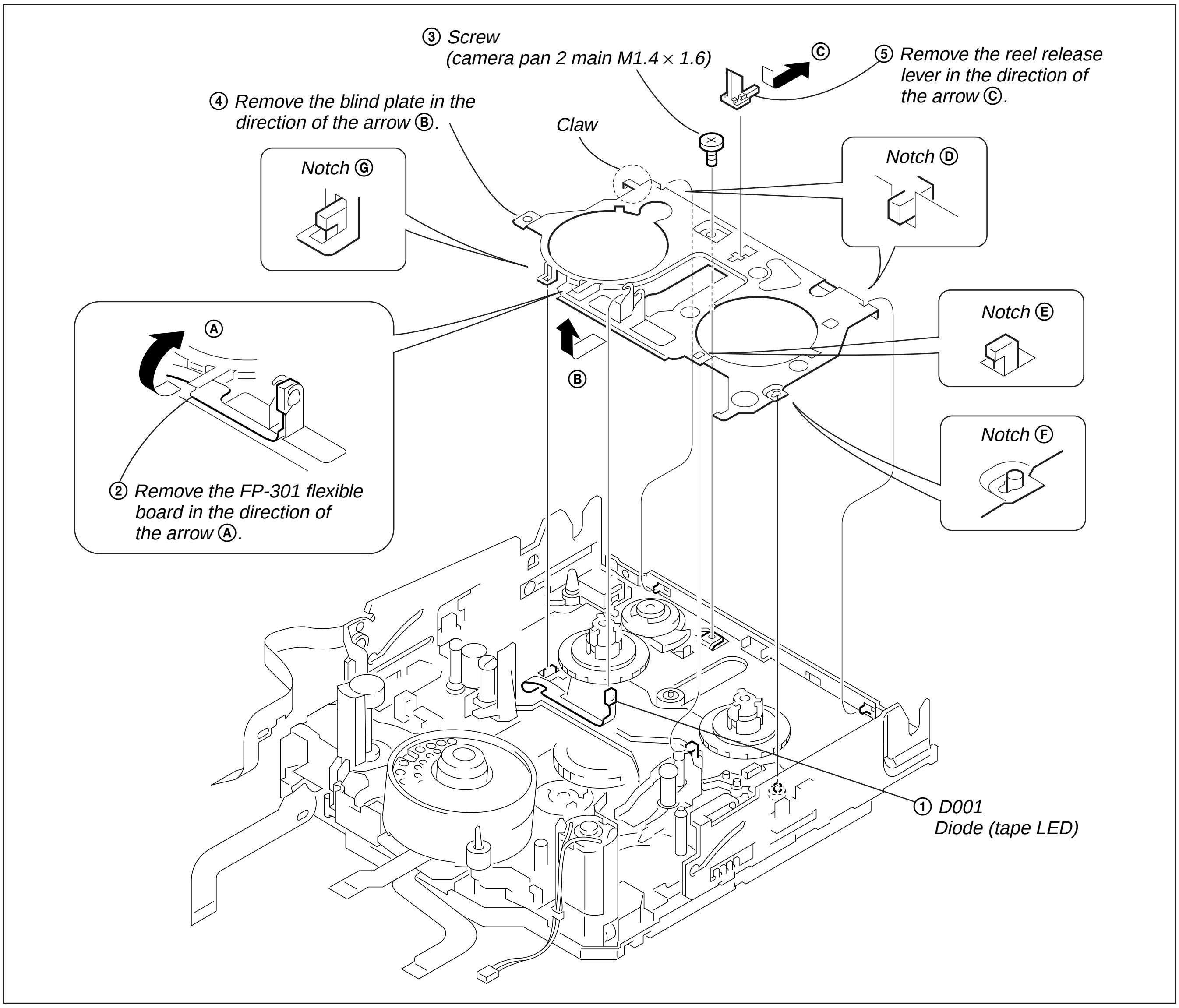

③ Screw
(camera pan 2 main M1.4 × 1.6)
Ⓒ
⑤ Remove the reel release lever in the direction of the arrow Ⓒ.
④ Remove the blind plate in the direction of the arrow Ⓑ.
Claw
Notch Ⓖ
Notch Ⓓ
Ⓐ
Notch Ⓔ
Ⓑ
Notch Ⓕ
② Remove the FP-301 flexible board in the direction of the arrow Ⓐ.
① D001
Diode (tape LED)

Fig. 4-5.

4-6. Reel Table (T) Assembly, T Soft Assembly

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Open the claw of the reel table T assembly ① in the directions of the arrows Ⓑ and Ⓒ and remove the reel table T assembly.
3) Remove the T soft assembly ② in the direction of the arrow Ⓐ.
4) Remove the T ratchet spring ③.
5) Remove the T ratchet arm ④ in the direction of the arrow Ⓓ.

2. Attachment procedure

1) Insert the T ratchet arm ④ into the groove on the LS chassis block assembly to attach it.
2) Attach the T ratchet spring ③ to the notch of the T ratchet arm ④ and LS chassis block assembly.
3) Insert the T soft assembly into the groove on the LS chassis block assembly.
4) Check the location of the reel table T assembly and attach the LS chassis block assembly to the shaft.
5) Attach the blind plate. (Refer to 4-5.)

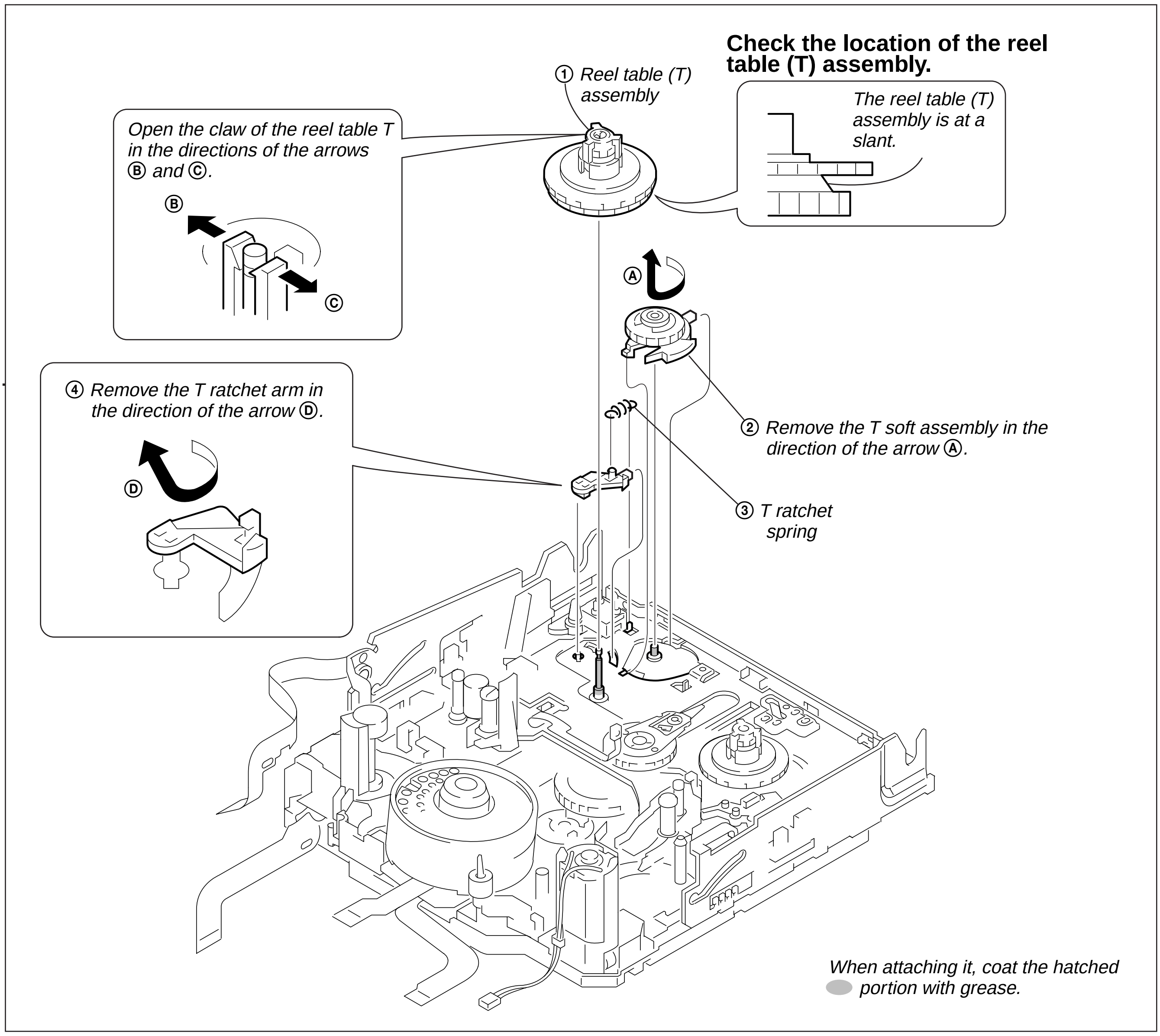

Check the location of the reel table (T) assembly.
The reel table (T) assembly is at a slant.
① Reel table (T) assembly
Open the claw of the reel table T in the directions of the arrows Ⓑ and Ⓒ.
Ⓑ
Ⓒ
Ⓐ
④ Remove the T ratchet arm in the direction of the arrow Ⓓ.
Ⓓ
② Remove the T soft assembly in the direction of the arrow Ⓐ.
③ T ratchet spring
When attaching it, coat the hatched ● portion with grease.

Fig. 4-6.

4-7. S Ratchet RE Plate, Cassette Guide S

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Remove the RE return plate spring ①.
3) Remove the S ratchet spring ②.
4) Remove the S ratchet arm ③ in the direction of the arrow Ⓐ.

Note: Do not reuse the S ratchet arm.

5) Remove the S ratchet RE plate.
6) Remove the screw (camera tapping M1.4 × 2)⑤.
7) Remove the cassette guide S ⑥ in the direction of the arrow Ⓑ.

2. Attachment procedure

1) Attach the cassette guide S ⑥ to the notch of the LS chassis block assembly with the screw (camera tapping M1.4 × 2).
2) Attach the S ratchet RE plate ④ to the shaft of the LS chassis block assembly.
3) Attach the S ratchet arm ③ to the shaft of the LS chassis block assembly. At this time, the dowel of the S ratchet RE plate ④ must be inserted into the U-shaped notch of the S ratchet arm ③.
4) Hook the S ratchet spring ② on the notch of the S ratchet arm and attach it to the notch of the LS chassis block assembly.
5) Attach the RE return plate spring ① to the notch of the LS chassis block assembly.
6) Attach the blind plate. (Refer to 4-5.)

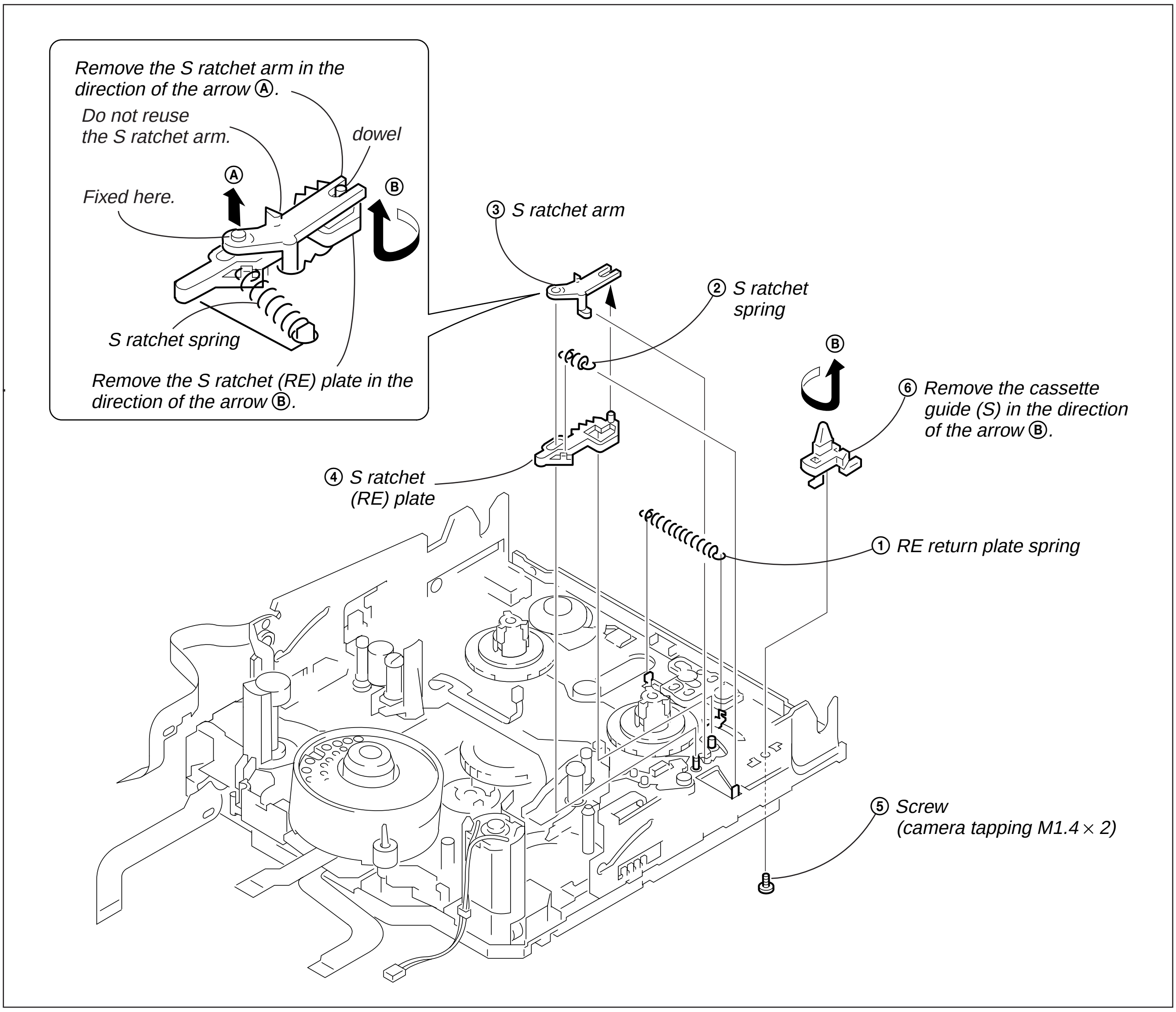

Remove the S ratchet arm in the direction of the arrow Ⓐ.
Do not reuse the S ratchet arm.
dowel
Ⓐ
Ⓑ
Fixed here.
S ratchet spring
Remove the S ratchet (RE) plate in the direction of the arrow Ⓑ.
③ S ratchet arm
② S ratchet spring
Ⓑ
⑥ Remove the cassette guide (S) in the direction of the arrow Ⓑ.
④ S ratchet (RE) plate
① RE return plate spring
⑤ Screw (camera tapping M1.4 × 2)

Fig. 4-7.

4-8. R Drive Gear Assembly, LS Cam Plate

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Remove the lumiler cut washer (0.98 × 3 × 0.13) ①.
3) Remove the R drive gear assembly ②.
4) Remove the HLC cut (1.8 × 4 × 0.5) ③ and the two screws (precision type3 +P1.7 × 1.8) ④.
5) Remove the LS cam plate ⑤.

2. Attachment procedure

1) Attach the R drive gear assembly ② with the lumiler cut washer (0.98 × 3 × 0.13) ①.
2) Align the LS cam plate ⑤ with the two dowels of the LS chassis block assembly, temporarily fix the LS cam plate ⑤ with the two screws (precision type3 +P1.7 × 1.8), then attach it with the HLC cut (1.8 × 4 × 0.5) ③.
3) Adjust the position of the LS cam plate. (Refer to 4-9.)

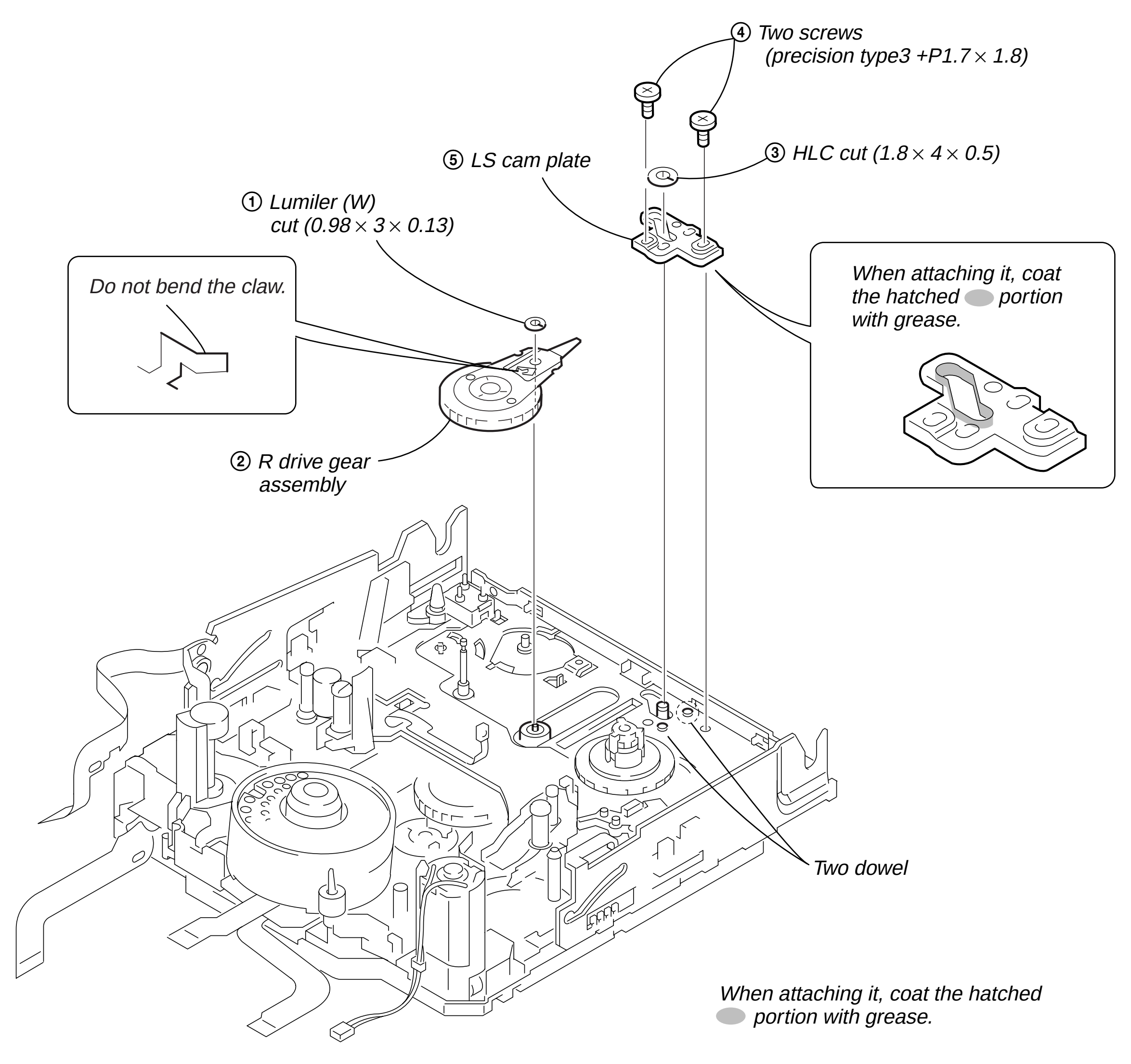

④ Two screws (precision type3 +P1.7 × 1.8)
⑤ LS cam plate
③ HLC cut (1.8 × 4 × 0.5)
① Lumiler (W) cut (0.98 × 3 × 0.13)
Do not bend the claw.
When attaching it, coat the hatched ● portion with grease.
② R drive gear assembly
Two dowel
When attaching it, coat the hatched ● portion with grease.

Fig. 4-8.

4-9. LS Cam Plate Position Adjustment

1. Adjustment Procedure

1) Perform loading of the LS chassis block assembly ① until the tip of the guide base (S) assembly reaches the drum base assembly.
2) Loosen the two screws (precision type3 +P1.7 × 1.8) ② of the LS cam plate and slide the LS chassis block assembly to the drum side so as to remove play.
3) Insert the thickness gauge 0.6 mm (Ref. No. J-16) between the LS cam plate and the LS chassis block assembly. Push the LS cam plate in the direction opposite to the drum to remove play.
4) Fix the two screws (precision type3 +P1.7 × 1.8) ②.
   Tightening torque: 0.108 ± 0.01 N•m (1.1 kgf•cm)

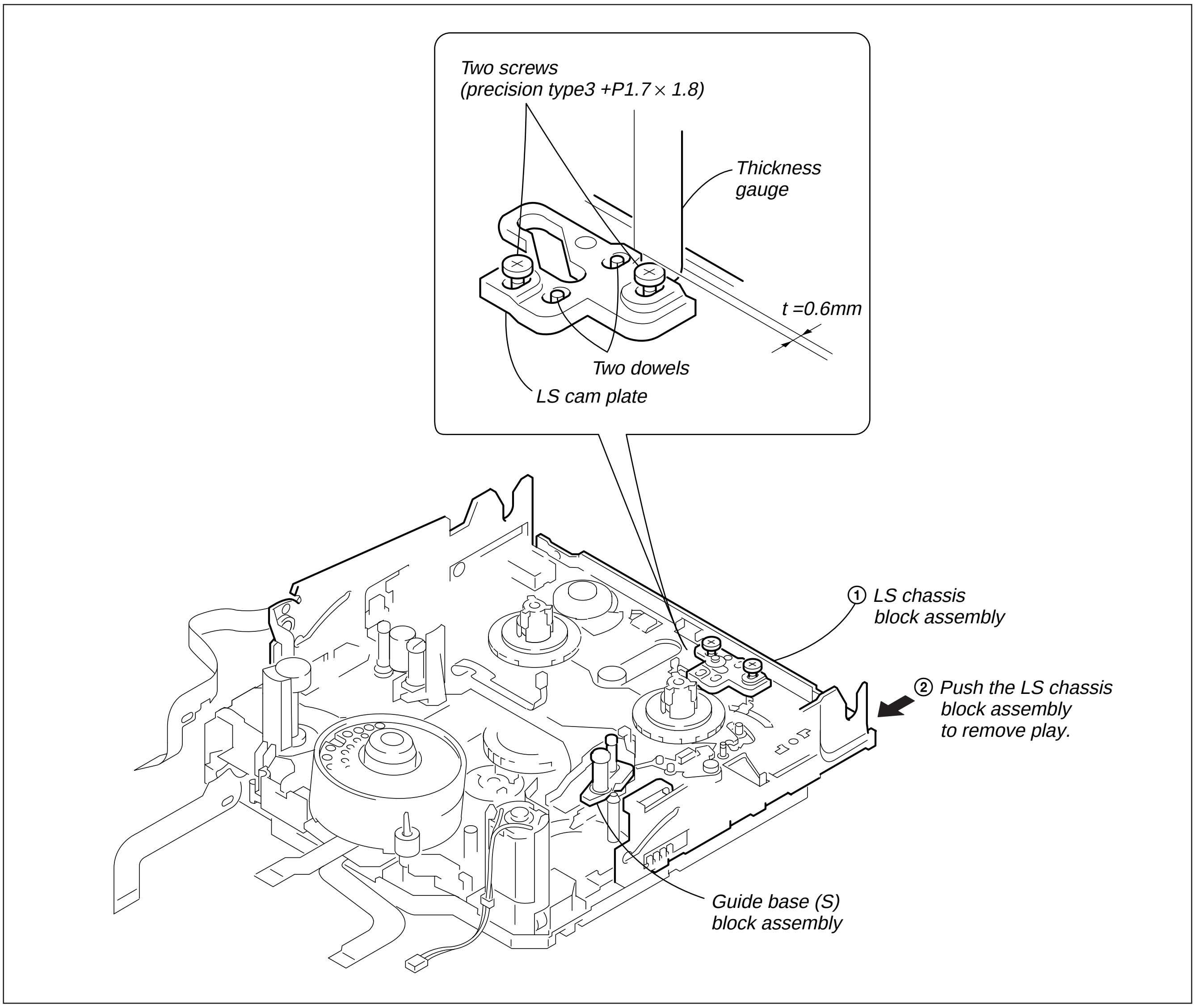

Two screws
(precision type3 +P1.7 × 1.8)
Thickness gauge
t =0.6mm
Two dowels
LS cam plate
① LS chassis block assembly
② Push the LS chassis block assembly to remove play.
Guide base (S) block assembly

Fig. 4-9.

4-10. LS Chassis Block Assembly

1. Removal procedure

1) Move the LS chassis block assembly between USE and LOAD.
2) Remove the blind plate. (Refer to 4-5.)
3) Remove the R drive gear assembly. (Refer to 4-8.)
4) Remove the HCL cut (1.8 × 4 × 0.5) ①.
5) Remove the three screws (M1.4 × 2.5) ②.
6) Remove the LS chassis block assembly ③ in the direction of the arrow Ⓐ.

2. Attachment procedure

1) Insert the LS guide roller and LS guide T2 pin of the mechanical chassis block assembly into the slot of the LS chassis block assembly ④.
2) Insert the pin of the LS arm assembly into the cam groove on the LS cam plate, face the TG7 drive pin ⑤ in the direction of the arrow Ⓑ, and insert it to the two slot of the mechanical chassis. Then, tighten the three screws (M1.4 × 2.5) ② in the order of Ⓒ, Ⓓ and Ⓔ.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
3) Attach the HCL cut (1.8 × 4 × 0.5) ① to the pin of the LS arm assembly.
4) Attach the R drive gear assembly. (Refer to 4-8.)
5) Attach the blind plate. (Refer to 4-5.)
6) Clean the tape running path. (Refer to 2-2.)

Note: Each arm must move smoothly.

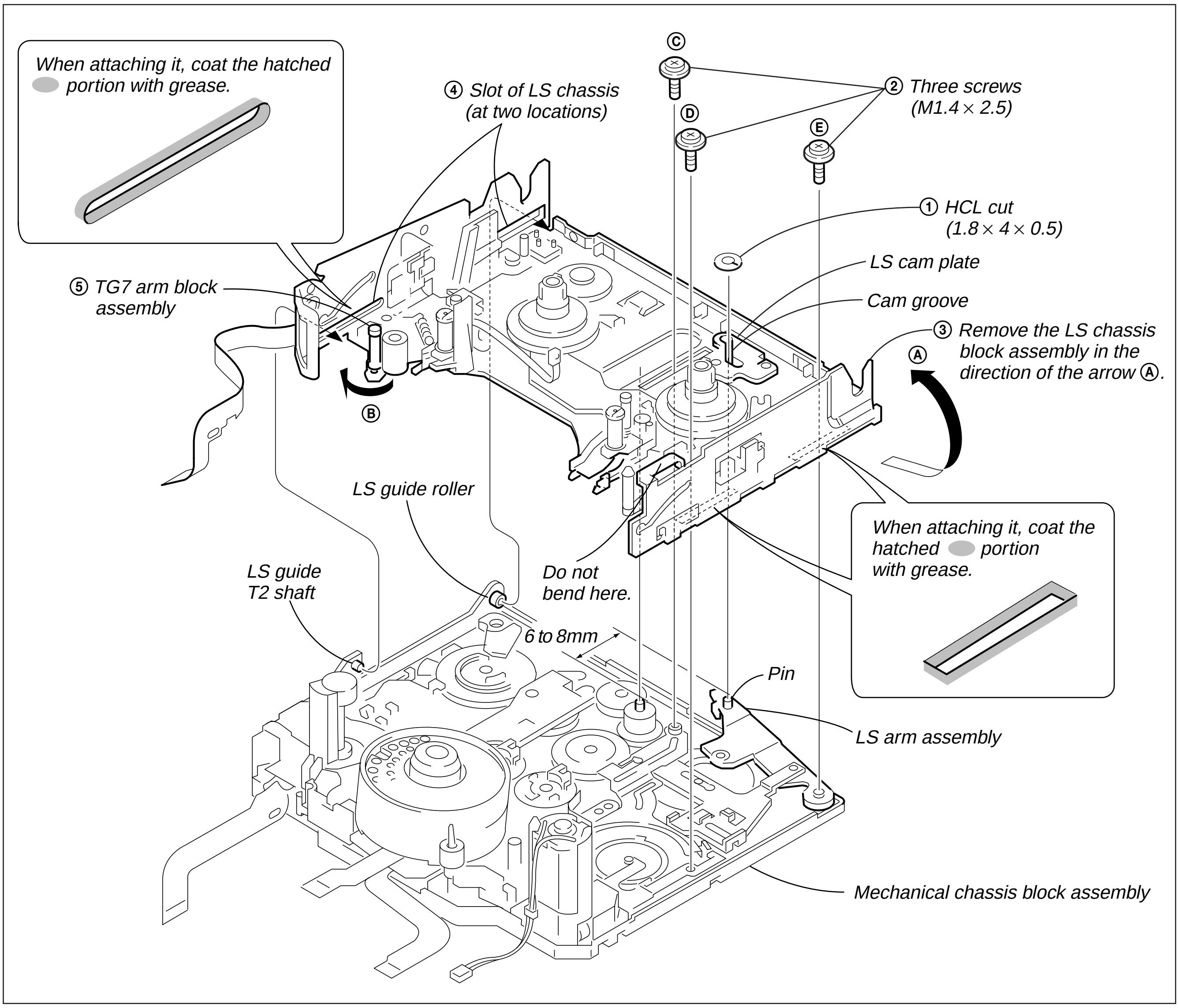

When attaching it, coat the hatched ● portion with grease.
④ Slot of LS chassis (at two locations)
Ⓒ
Ⓓ
Ⓔ
② Three screws (M1.4 × 2.5)
① HCL cut (1.8 × 4 × 0.5)
LS cam plate
Cam groove
⑤ TG7 arm block assembly
③ Remove the LS chassis block assembly in the direction of the arrow Ⓐ.
Ⓐ
Ⓑ
LS guide roller
LS guide T2 shaft
Do not bend here.
6 to 8mm
When attaching it, coat the hatched ● portion with grease.
Pin
LS arm assembly
Mechanical chassis block assembly

Fig. 4-10.

4-11. TG7 Arm Block Assembly, Pinch Arm Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the screw (camera pan2 M1.4 × 1.6) ①.
3) Remove the TG7 retainer ② in the direction of the arrow.
4) Remove the TG7 arm block assembly ⑥ and TG7 arm spring ⑦.
5) Remove the pinch roller arm assembly ③.
6) Remove the P lim arm roller ④ and pinch arm load spring ⑤.

2. Attachment procedure

1) Attach the P lim arm roller ④ to the pinch roller arm assembly ③.
2) Insert one end of the pinch arm load spring ⑤ into the hole on the rising metal sheet of the LS chassis block assembly, and hook the other end of the spring on the position setting protrusion of the LS-057 board.
3) Attach the pinch roller arm assembly ③ to the shaft of the LS chassis block assembly, and hook the pinch arm load spring ⑤ on the rising metal sheet of the pinch roller assembly ③.
4) Hook the TG7 arm spring ⑦ on the shaft of the LS chassis block assembly while the hook side of the spring is facing downward.
5) When attaching the TG7 arm block assembly ⑥ to the shaft of the LS chassis block assembly, hook the hook side of the TG7 arm spring ⑦ on the rising metal sheet of the LS chassis block assembly and hook the top side of the spring to the notch of the TG7 arm block assembly ⑥.
6) Attach the TG7 retainer ② with the screw (camera pan2 M1.4 × 1.6) ①.
7) Remove the LS chassis block assembly. (Refer to 4-10.)
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
8) Clean the tape running path. (Refer to 2-2.)

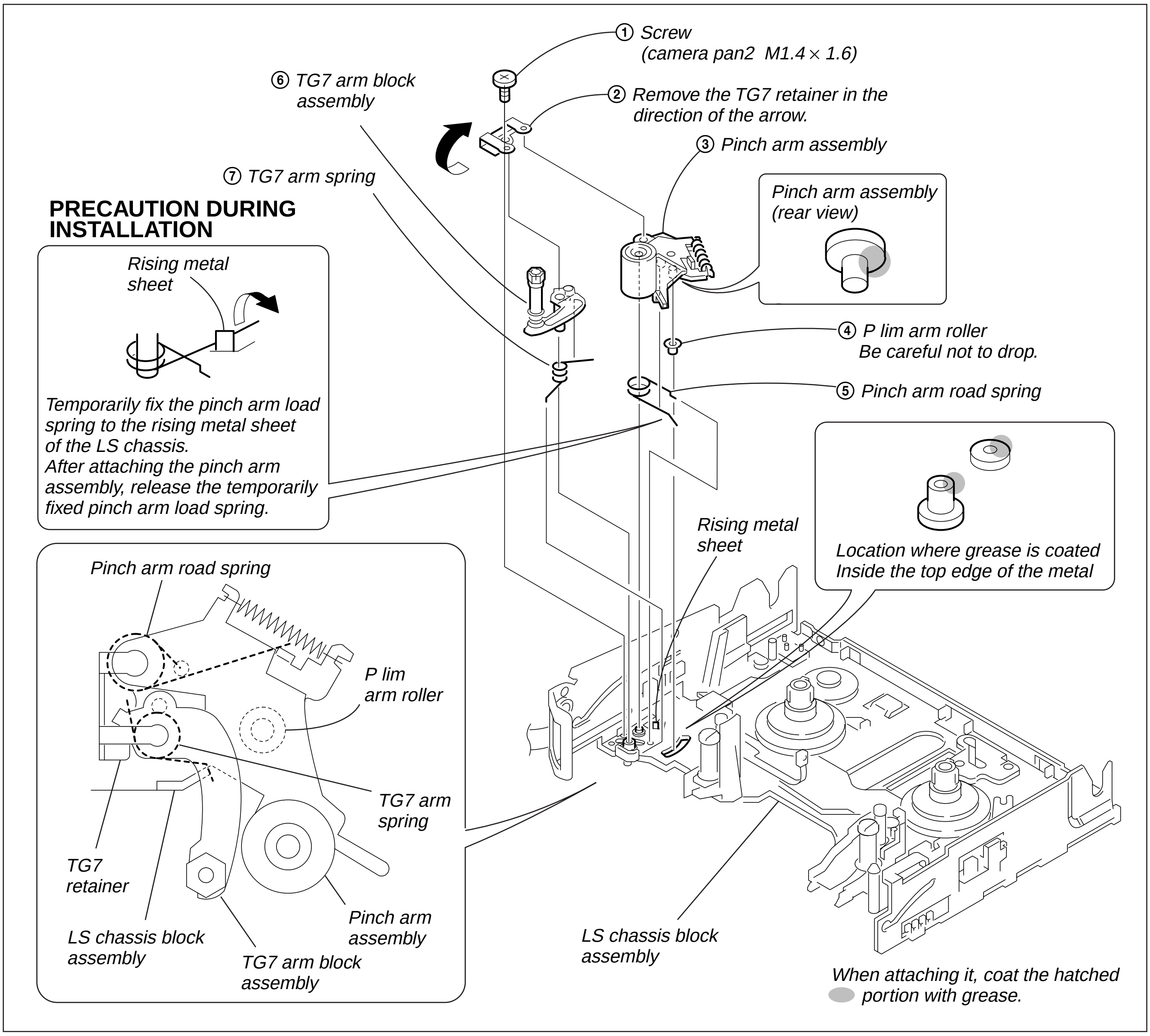

① Screw (camera pan2 M1.4 × 1.6)
⑥ TG7 arm block assembly
② Remove the TG7 retainer in the direction of the arrow.
③ Pinch arm assembly
⑦ TG7 arm spring
Pinch arm assembly (rear view)
PRECAUTION DURING INSTALLATION
Rising metal sheet
Temporarily fix the pinch arm load spring to the rising metal sheet of the LS chassis. After attaching the pinch arm assembly, release the temporarily fixed pinch arm load spring.
④ P lim arm roller Be careful not to drop.
⑤ Pinch arm road spring
Location where grease is coated Inside the top edge of the metal
Rising metal sheet
Pinch arm road spring
P lim arm roller
TG7 arm spring
TG7 retainer
Pinch arm assembly
LS chassis block assembly
TG7 arm block assembly
LS chassis block assembly
When attaching it, coat the hatched ● portion with grease.

Fig. 4-11.

4-12. Guide Base (T) Block Assembly, Guide Base (S) Block Assembly

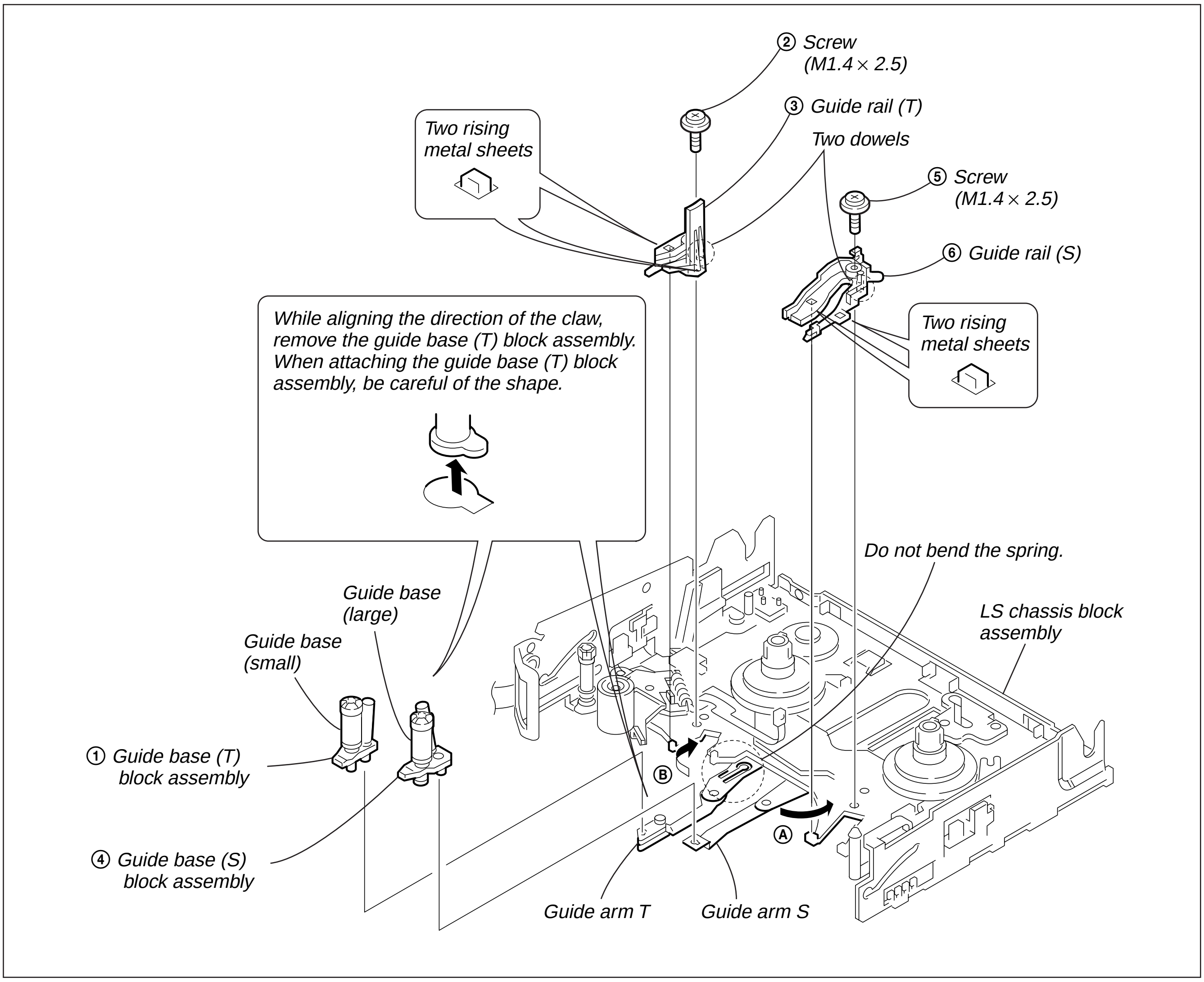
1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Align the claw of the guide base (T) block assembly ① with the notch of the guide arm T and remove the guide base (T) block assembly.
3) Remove the screw (M1.4 × 2.5) ② and remove the guide rail (T) ③.
4) Align the claw of the guide base (S) block assembly ④ with the notch of the guide arm S and remove the guide base (S) block assembly.
5) Remove the screw (M1.4 × 2.5) ⑤ and remove the guide rail (S) ⑥.

2. Attachment procedure

1) Align the holes on the guide rail (S) ⑥ with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (S) ⑥ with the screw (M1.4 × 2.5) ⑤.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
2) Attach the guide base (S) block assembly ④ while aligning it with the groove on the guide arm S.
3) Align the holes on the guide rail (T) ③ with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (T) ③ with the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the guide base (T) block assembly ① while aligning it with the groove on the guide arm T.
   Note: Do not forget to hook the plate spring.
5) Withdraw the joint portion of the guide arm S and the guide arm T in the directions of the arrows Ⓐ and Ⓑ.
6) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
7) Clean the tape running path. (Refer to 2-2.)

Note: Be careful of the shape of the guide base T/S block assembly.
Guide base (T) block assembly = Guide base (small)
Guide base (S) block assembly = Guide base (large)


② Screw
(M1.4 × 2.5)
③ Guide rail (T)
Two dowels
Two rising metal sheets
⑤ Screw
(M1.4 × 2.5)
⑥ Guide rail (S)
Two rising metal sheets
Do not bend the spring.
LS chassis block assembly
Guide base (large)
Guide base (small)
① Guide base (T) block assembly
④ Guide base (S) block assembly
Ⓑ
Ⓐ
Guide arm T
Guide arm S

While aligning the direction of the claw, remove the guide base (T) block assembly. When attaching the guide base (T) block assembly, be careful of the shape.

Fig. 4-12.

4-13. TG1 Arm, Reel Table (S) Assembly, Push Switch (3Key)

1. Removal procedure

1) Remove the TG1 arm spring ①.
   Note: Take note of the position where the spring has been hooked.
2) Remove the TG1 arm ②.
3) Open the claw of the reel table (S) assembly ④ in the directions of the arrows Ⓑ and Ⓒ and remove the reel table S assembly.
4) Remove the RVS arm spring ⑤.
5) Rotate the S ratchet arm ③ in the direction of the arrow Ⓐ and remove the BT band assembly ⑥.
6) Remove the lock guide ⑦.
7) Remove the four solderings of the LS-057 board.
8) Remove the two claws ⑨ of the cassette guide T ⑫ from the notch of the LS chassis.
9) Remove the push switch (3key) ⑪ by releasing the two claws of the cassette guide T ⑫.

2. Attachment procedure

1) Attach the push switch (3key) ⑪ to the cassette guide T ⑫ with the two claws ⑩.
2) Attach the cassette guide T ⑫ to the notch of the LS chassis block assembly with the two claws ⑨.
3) Solder the cassette guide T ⑫ to the LS-057 board at the four locations.
4) Attach the lock guide ⑦.
5) Attach the BT band assembly ⑥.
6) Check the location of the reel table S ④. Then, rotate the S ratchet arm ③ in the direction of the arrow Ⓐ and insert the band of the BT band assembly ⑥ into the groove on the side.
7) Attach the BT band assembly to the TG1 arm ② and attach it to the mechanism chassis block assembly.
8) Check the shape of the hook of the TG1 arm spring ①. Hook one end of the spring on the TG1 arm ②. Then, hook the other end of the spring on the same location of the LS chassis block assembly where you have taken note when the spring is removed.
9) Attach the RVS arm spring.
10) Check the TG1 back-tension. (Refer to 5-1.)
    Note: The BT band assembly ⑤ must be completely inserted into the groove on the side of the reel table (S) ④.

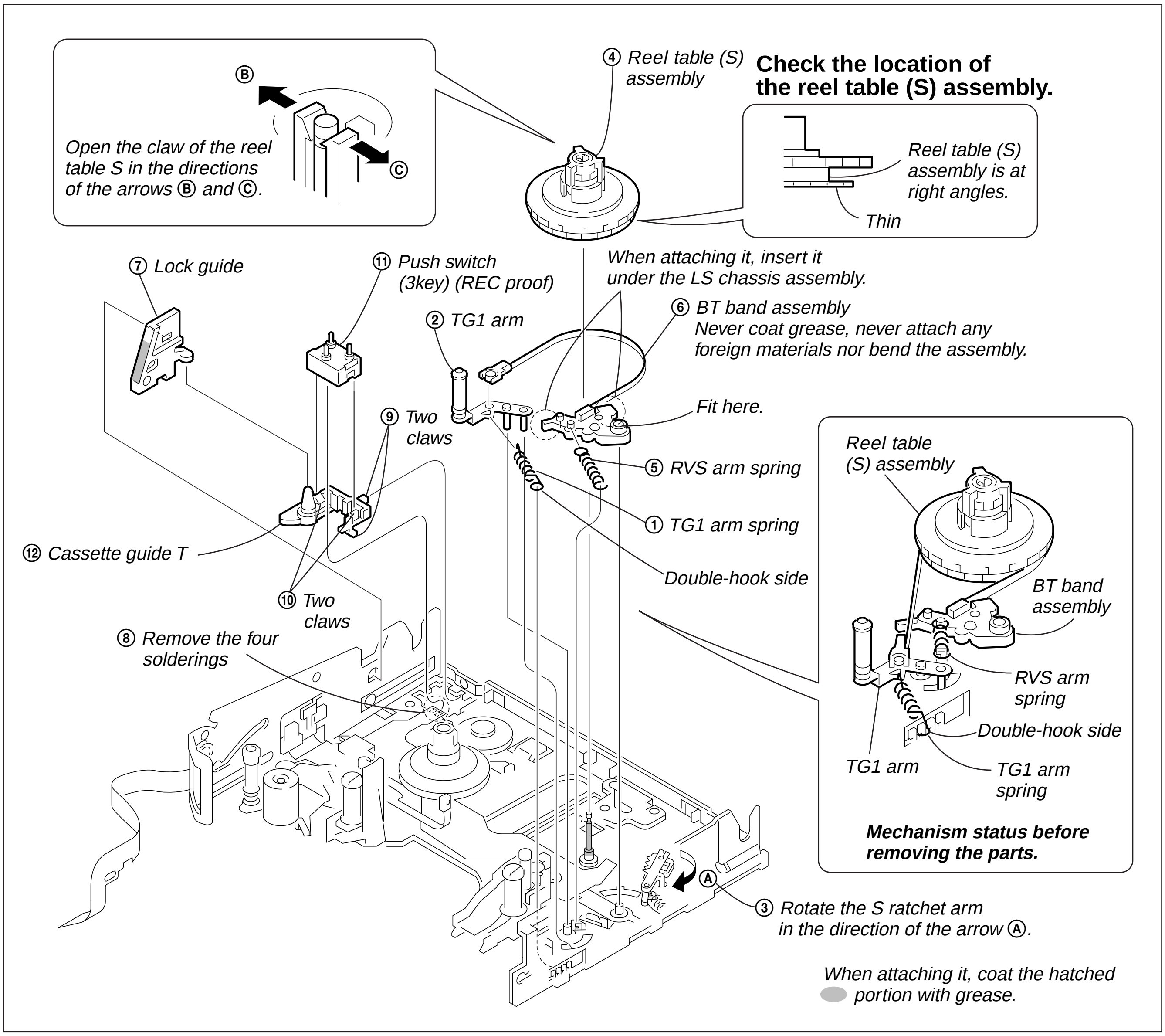

Ⓑ
Ⓒ
Open the claw of the reel table S in the directions of the arrows Ⓑ and Ⓒ.
④ Reel table (S) assembly
Check the location of the reel table (S) assembly.
Reel table (S) assembly is at right angles.
Thin
⑦ Lock guide
⑪ Push switch (3key) (REC proof)
② TG1 arm
When attaching it, insert it under the LS chassis assembly.
⑥ BT band assembly Never coat grease, never attach any foreign materials nor bend the assembly.
Fit here.
⑨ Two claws
⑤ RVS arm spring
① TG1 arm spring
Double-hook side
⑫ Cassette guide T
⑩ Two claws
⑧ Remove the four solderings
Reel table (S) assembly
BT band assembly
RVS arm spring
Double-hook side
TG1 arm
TG1 arm spring
Mechanism status before removing the parts.
Ⓐ
③ Rotate the S ratchet arm in the direction of the arrow Ⓐ.
When attaching it, coat the hatched portion with grease.

Fig. 4-13.

4-14. Hall Element (H001, H002 (T/S Reel)), Photo Transistor (Q001, Q002 (Tape Top/Tape End), D001 (Tape LED)), LED (D001 (Tape LED))

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the LS grease cover.
3) Remove the two solderings and remove Q001 (tape top).
4) Remove the two solderings and remove Q002 (tape end).
5) Remove the two solderings and remove D001 (tape LED).
6) Remove the four solderings respectively from H001 (T reel) and H002 (S reel) and remove the H001 and H002.

2. Attachment procedure

1) Solder H001 (T reel) and H002 (S reel) respectively at the four locations.
2) Solder Q002 (tape end) at the two locations.
3) Solder Q001 (tape top) at the two locations.
4) Solder D001 (tape LED) at the two locations.
5) Attach the LS grease cover.
6) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

Note: Be careful of the plarities of the Hall element (H001, H002), Photo-transistor (Q001, Q002) and LED (D001).

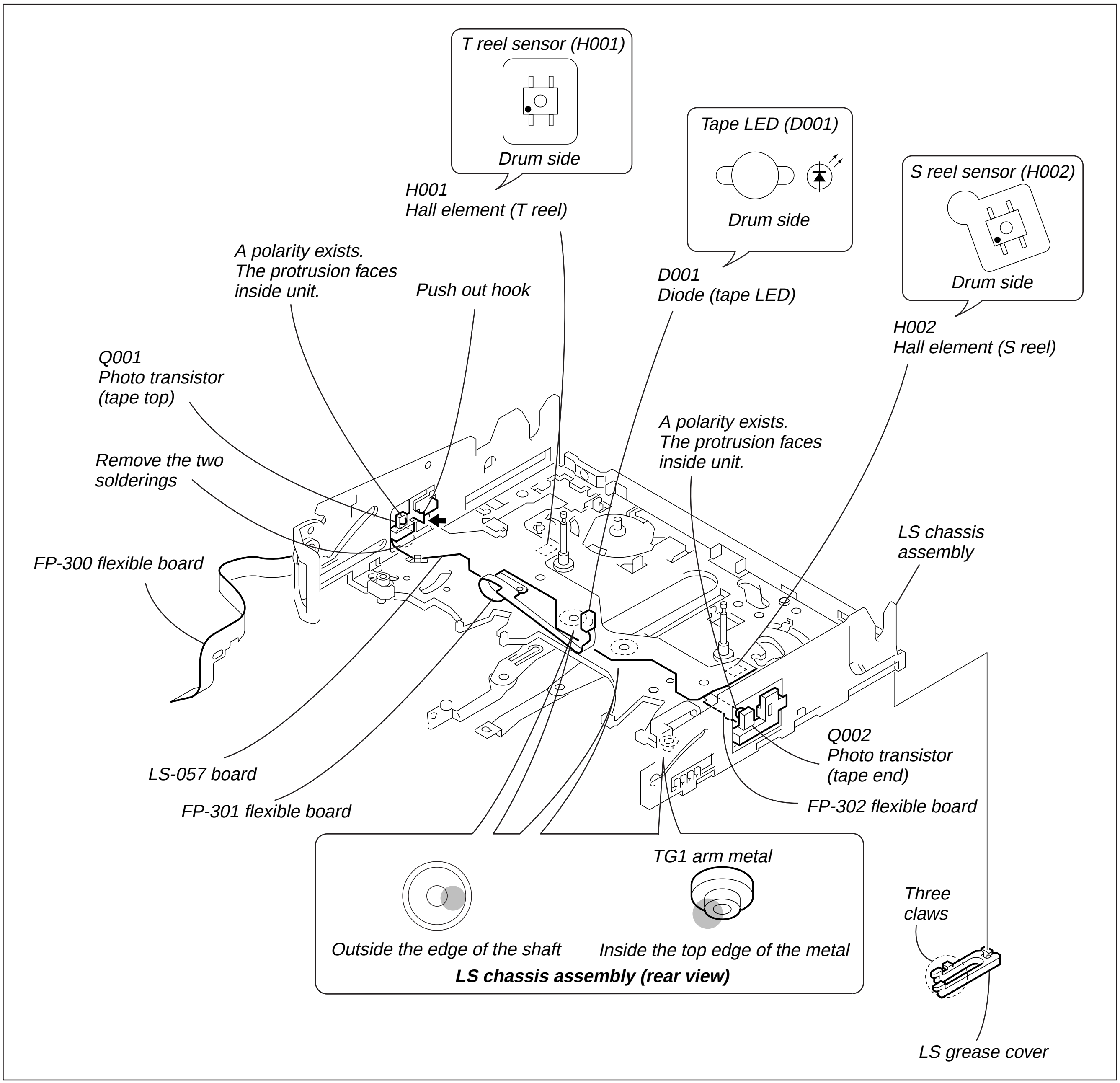

T reel sensor (H001)
Drum side
H001
Hall element (T reel)
Tape LED (D001)
Drum side
S reel sensor (H002)
Drum side
A polarity exists.
The protrusion faces inside unit.
Push out hook
D001
Diode (tape LED)
H002
Hall element (S reel)
Q001
Photo transistor
(tape top)
A polarity exists.
The protrusion faces inside unit.
Remove the two solderings
LS chassis assembly
FP-300 flexible board
LS-057 board
FP-301 flexible board
Q002
Photo transistor
(tape end)
FP-302 flexible board
TG1 arm metal
Three claws
Outside the edge of the shaft
Inside the top edge of the metal
LS chassis assembly (rear view)
LS grease cover

Fig. 4-14.

4-15. LS Guide Roller, Guide Lock Plate (T), Pinch Pusher Assembly, Eject Arm

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the LS guide roller ①.
3) Remove the P pressure plate spring ②.
4) Remove the HLW cut (0.98 × 3 × 0.25) ③.
5) Remove the pitch pressure plate assembly ④ in the direction of the arrow Ⓐ.
6) Remove the relay gear ⑤.
7) Remove the screw (camera pan2 M1.4 × 1.6) ⑥.
8) Remove the guide lock plate (T) ⑦ in the direction of the arrow Ⓑ.
9) Remove the eject arm spring ⑧ and HLW cut (0.98 × 3 × 0.25) ⑨.
   Note: Do not reuse the HLW cut.
10) Remove the eject arm ⑩.

2. Attachment procedure

1) Attach the eject arm spring ⑧ to the eject arm ⑩.
2) Hook one end of the eject arm spring ⑧ on the protrusion of the main chassis block assembly and attach the eject arm to the shaft.
3) Attach the HLW cut (0.98 × 3 × 0.25) ⑨.
   Do not reuse the HLW cut.
4) Attach the guide lock plate T ⑦ while aligning it with the notches Ⓒ and Ⓓ.
5) Attach the screw (camera pan2 M1.4 × 1.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
6) Attach the relay gear ⑤.
7) Attach the pinch pusher plate ④ with the HLW cut (0.98 × 3 × 0.25) ③.
8) Attach the P pressure plate spring ②.
   Insert the concave side of the LS guide roller ① into the shaft to attach the LS guide roller.
   Note: Insert the roller completely.
9) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

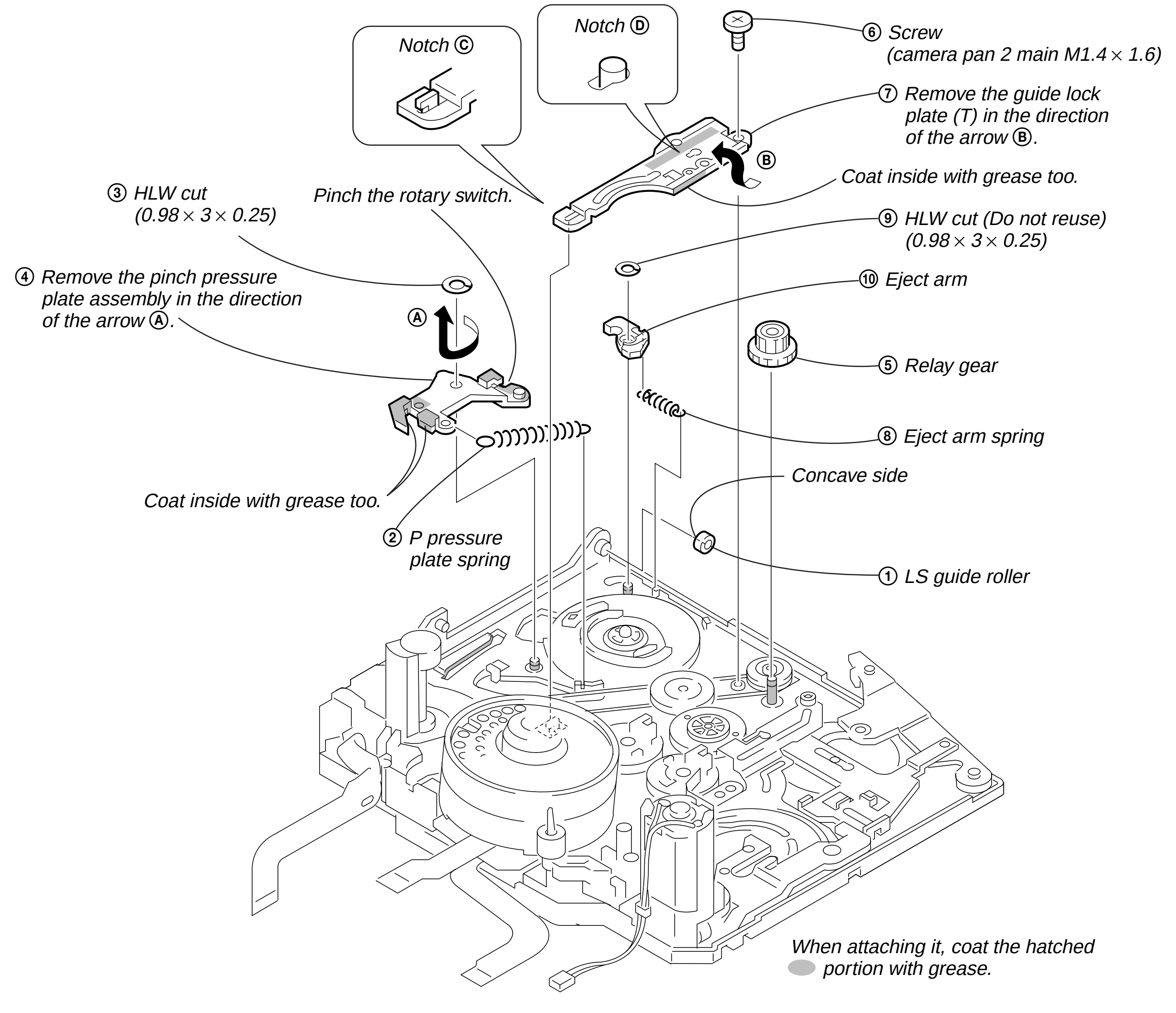

Notch Ⓒ
Notch Ⓓ
⑥ Screw (camera pan 2 main M1.4 × 1.6)
⑦ Remove the guide lock plate (T) in the direction of the arrow Ⓑ.
Ⓑ
Coat inside with grease too.
③ HLW cut (0.98 × 3 × 0.25)
Pinch the rotary switch.
⑨ HLW cut (Do not reuse) (0.98 × 3 × 0.25)
④ Remove the pinch pressure plate assembly in the direction of the arrow Ⓐ.
⑩ Eject arm
Ⓐ
⑤ Relay gear
⑧ Eject arm spring
Concave side
Coat inside with grease too.
② P pressure plate spring
① LS guide roller
When attaching it, coat the hatched ● portion with grease.

Fig. 4-15.

4-16. Rotary Switch, Cam Relay Gear, Change Gear Assembly, Timing Belt

Before replacing the timing belt, remove the guide rail T2 and capstan motor. (Refer to 4-4.)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
3) Remove the cam relay gear ①.
4) Remove the timing belt ②.
5) Remove the HLW cut (0.98 × 3 × 0.25) ③ and change gear assembly ④.
6) Remove the four solderings ⑤ and remove the FP-299 flexible wiring board ⑥.
7) Push up the dowel of the rotary switch ⑦ from the bottom of the mechanism chassis assembly and remove the rotary switch in the direction of the arrow.

2. Attachment procedure

1) Insert the dowel of the rotary switch ⑦ into the hole on the mechanism chassis assembly and attach the rotary switch clockwise.
2) Align the FP-299 flexible wiring board ⑥ with the reference hole on the mechanism chassis and solder the flexible wiring board to the rotary switch ⑦ (at four locations).
3) Attach the change gear assembly ④ with the HLC cut (0.98 × 3 × 0.25)③.
4) Attach the timing belt ②.
   Note: There must be a clearance between the rotary switch ⑦ and timing belt ②.
5) Attach the cam relay gear ①.
   The in-phase markings of the rotary switch ⑦, cam relay gear (2) and cam relay gear (1) must be aligned.
6) Attach the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
7) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
8) Clean the shaft of the capstan motor. (Refer to 2-2.)

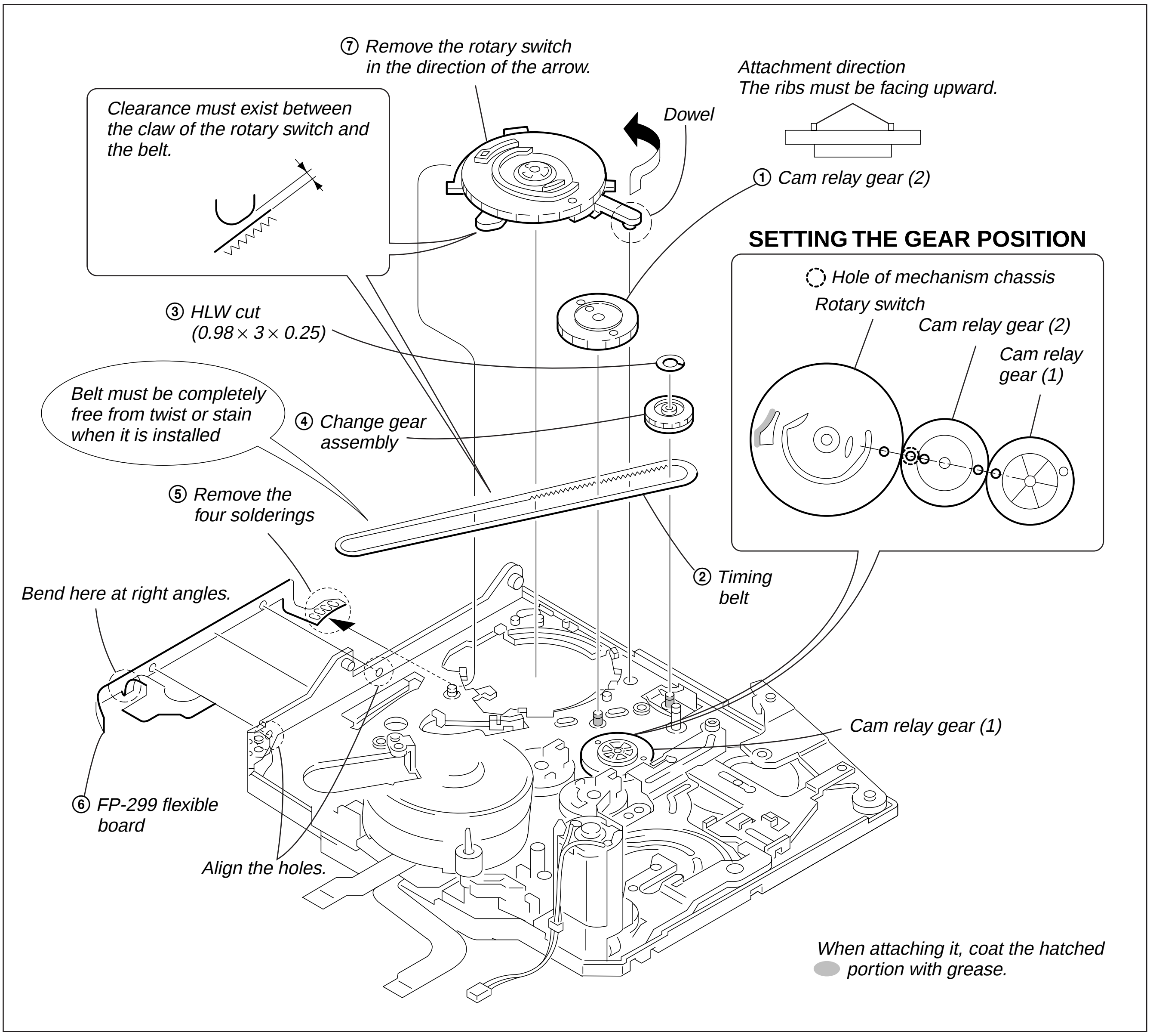

⑦ Remove the rotary switch in the direction of the arrow.
Attachment direction
The ribs must be facing upward.
Clearance must exist between the claw of the rotary switch and the belt.
Dowel
① Cam relay gear (2)
SETTING THE GEAR POSITION
◌ Hole of mechanism chassis
Rotary switch
Cam relay gear (2)
Cam relay gear (1)
③ HLW cut (0.98 × 3 × 0.25)
Belt must be completely free from twist or stain when it is installed
④ Change gear assembly
⑤ Remove the four solderings
② Timing belt
Bend here at right angles.
Cam relay gear (1)
⑥ FP-299 flexible board
Align the holes.
When attaching it, coat the hatched ● portion with grease.

Fig. 4-16.

4-17. Guide Gear Assembly, Guide Gear T Assembly, Cam Relay Gear 1, Guide Lock Plate (S)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the screw (camera pan2 main M1.4 × 1.6) ①.
3) Remove the guide lock plate (S) ② in the direction of the arrow Ⓐ.
4) Remove the two stop rings (E type 1.2) ③.
5) Remove the guide gear (S) assembly ④ and guide gear (T) assembly ⑤.
6) Remove the HLW cut (0.98 × 3 × 0.25) ⑥.
7) Remove the cam relay gear (1) ⑦.

2. Attachment procedure

1) Attach the cam relay gear (1) ⑦ with the HLW cut (0.98 × 3 × 0.25) ⑥.
   Note: The in-phase markings of the cam relay gear (1) ⑦, cam gear (2) and cam relay gear must be aligned.
2) Attach the guide gear (T) assembly ⑤ and guide gear (S) assembly ④ to the shaft in this order and adjust the positions. Then, attach them with the two stop rings (E type 1.2) ③.
   Note1: The in-phase markings of the GL arm assembly, guide gear (S) ④ and guide gear (T) ⑤ must be aligned.
   Note2: The guide gear assembly (S/T) has a different shape respectively. Pay attention to the shapes.
3) Fit the guide lock plate (S) ② in the groove on the shaft and insert the portion Ⓑ into the notch. Then, attach the plate with the screw (camera pan2 main M1.4 × 1.6) ①.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

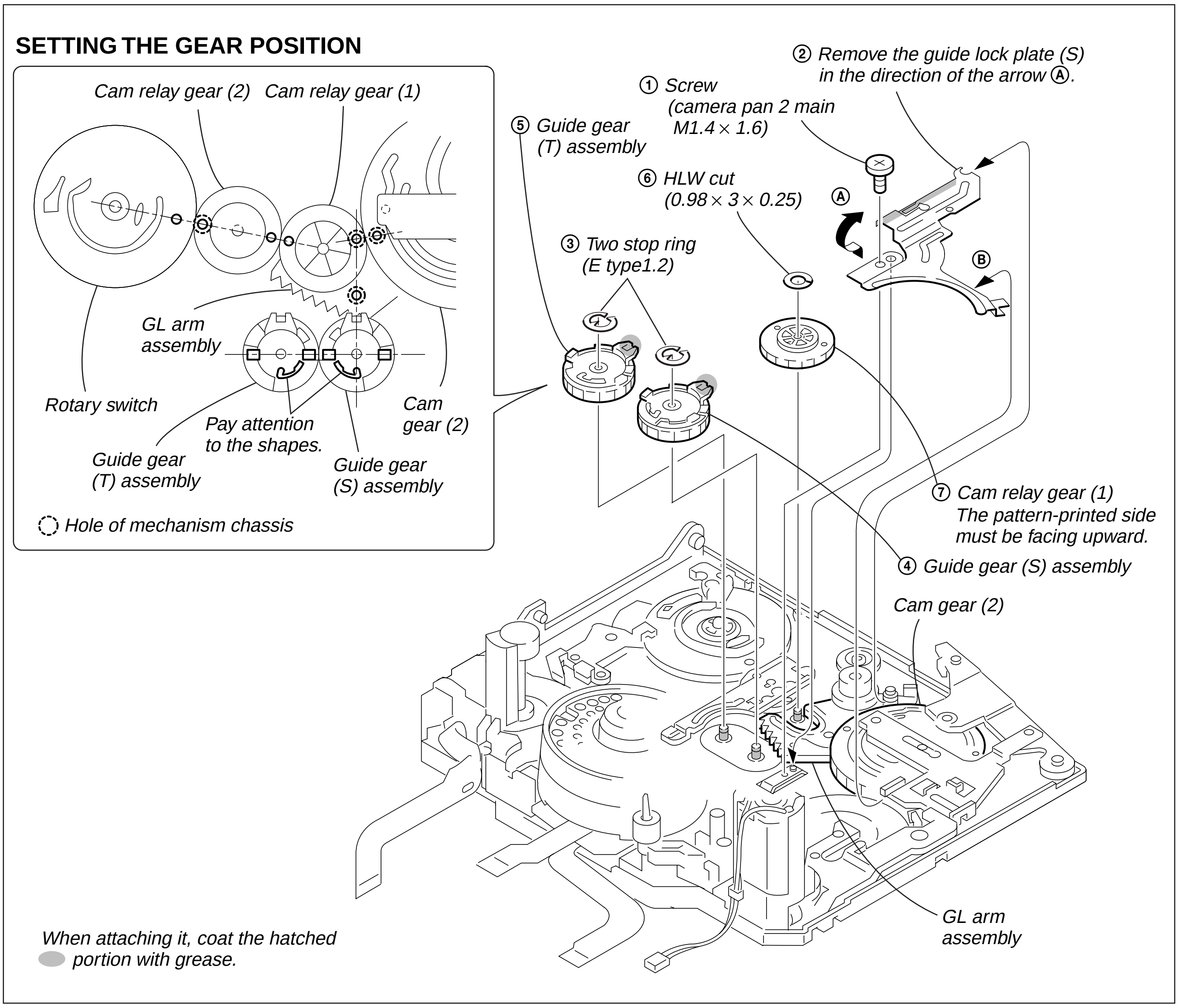

SETTING THE GEAR POSITION
Cam relay gear (2)
Cam relay gear (1)
GL arm assembly
Rotary switch
Pay attention to the shapes.
Cam gear (2)
Guide gear (T) assembly
Guide gear (S) assembly
Hole of mechanism chassis
② Remove the guide lock plate (S) in the direction of the arrow Ⓐ.
① Screw (camera pan 2 main M1.4 × 1.6)
⑤ Guide gear (T) assembly
⑥ HLW cut (0.98 × 3 × 0.25)
Ⓐ
Ⓑ
③ Two stop ring (E type1.2)
⑦ Cam relay gear (1) The pattern-printed side must be facing upward.
④ Guide gear (S) assembly
Cam gear (2)
GL arm assembly
When attaching it, coat the hatched portion with grease.

Fig. 4-17.

4-18. LD Gear 4, Cam Gear 1, HC Drive Arm

Remove in advance the HCL arm assembly and loading motor assembly beforehand. (Refer to 4-2.)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (S). (Refer to 4-17.)
3) Remove the cover sheet ① and LD gear (4) ②.
4) Remove the T1 limiter arm ③ and cam gear (1) ④.
5) Remove the HC drive arm ⑤ in the direction of the arrow.

2. Attachment procedure

1) Attach the HC drive arm ⑤ under the drive base assembly.
2) Attach the cam gear (1) ④.
   The dowel of the HC drive arm ⑤ must be inserted into the groove on the lower side of the cam gear (1) ④.
   The in-phase markings of the cam gear (1) ④, cam gear (2) and cam relay gear (1) must be aligned.
3) Attach the LD gear (4) ② with the cover sheet ①.
4) Attach the guide plate (S).
5) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
6) Clean the tape running path. (Refer to 2-2.)

SETTING THE GEAR POSITION

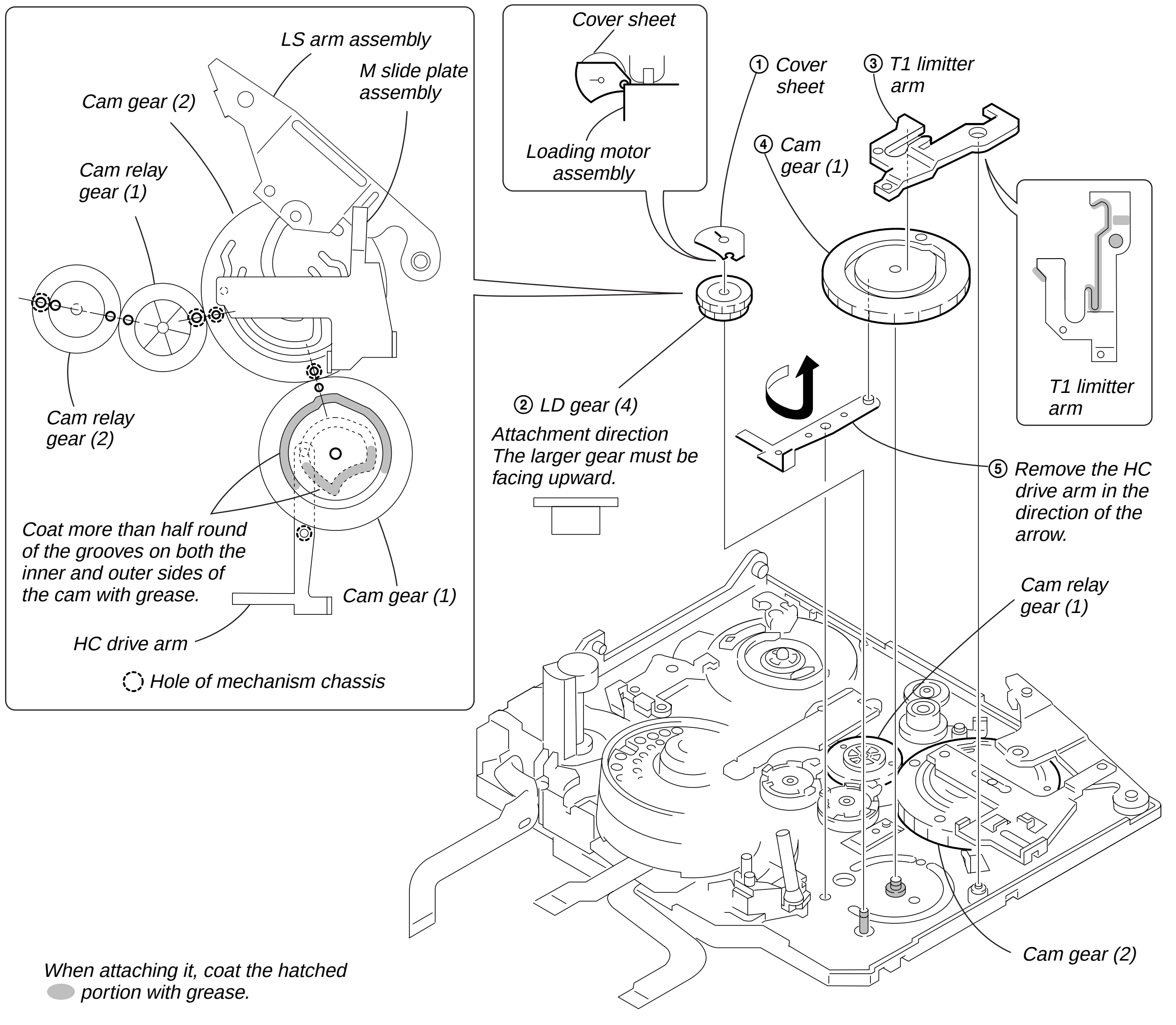

LS arm assembly
M slide plate assembly
Cam gear (2)
Cam relay gear (1)
Cam relay gear (2)
Coat more than half round of the grooves on both the inner and outer sides of the cam with grease.
Cam gear (1)
HC drive arm
Hole of mechanism chassis
Cover sheet
Loading motor assembly
① Cover sheet
③ T1 limitter arm
④ Cam gear (1)
T1 limitter arm
② LD gear (4)
Attachment direction
The larger gear must be facing upward.
⑤ Remove the HC drive arm in the direction of the arrow.
Cam relay gear (1)
Cam gear (2)
When attaching it, coat the hatched portion with grease.

Fig. 4-18.

4-19. M Slide Plate Assembly, LS Arm Assembly, Cam Gear 2, GL Arm Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (S) (Refer to 4-17.)
3) Remove the relay gear ①.
4) Remove the M slide plate assembly ② in the direction of the arrow Ⓐ.
5) Remove the LS arm assembly ③ and LS arm roller ④.
6) Remove the cam gear (2) ⑤.
7) Remove the GL arm assembly ⑥ from the lower side of the cam relay gear (1) in the direction of the arrow Ⓑ.

   Note: After removing the GL arm assembly, fix the guide gear (S/T) assembly.

2. Attachment procedure

1) Attach the GL arm assembly ⑥ to the shaft so that the GL arm assembly ⑥ is positioned under the cam relay gear (1) .

   Note: The in-phase markings of the guide gear (S/T) assembly and GL arm assembly ⑥ must be aligned.
2) While aligning the cam gear (2) ⑤ with the dowel of the GL arm assembly, attach the cam gear (2) ⑤.

   Note: The in-phase markings of the cam relay gear (1), cam gear (1) and cam gear (2) ⑤ must be aligned.
3) Attach the LS arm roller ④ to the LS arm assembly ③. While aligning them with the cam groove on the cam gear (2) ⑤, attach them.
4) Attach the M slide plate assembly ②.
5) Attach the relay gear ①.
6) Attach the guide lock plate (S). (Refer to 4-17.)
7) Attach the LS chassis block assembly to the mechaical chassis. (Refer to 4-10.)

Note: Check that the in-phase marking of each gear is aligned.

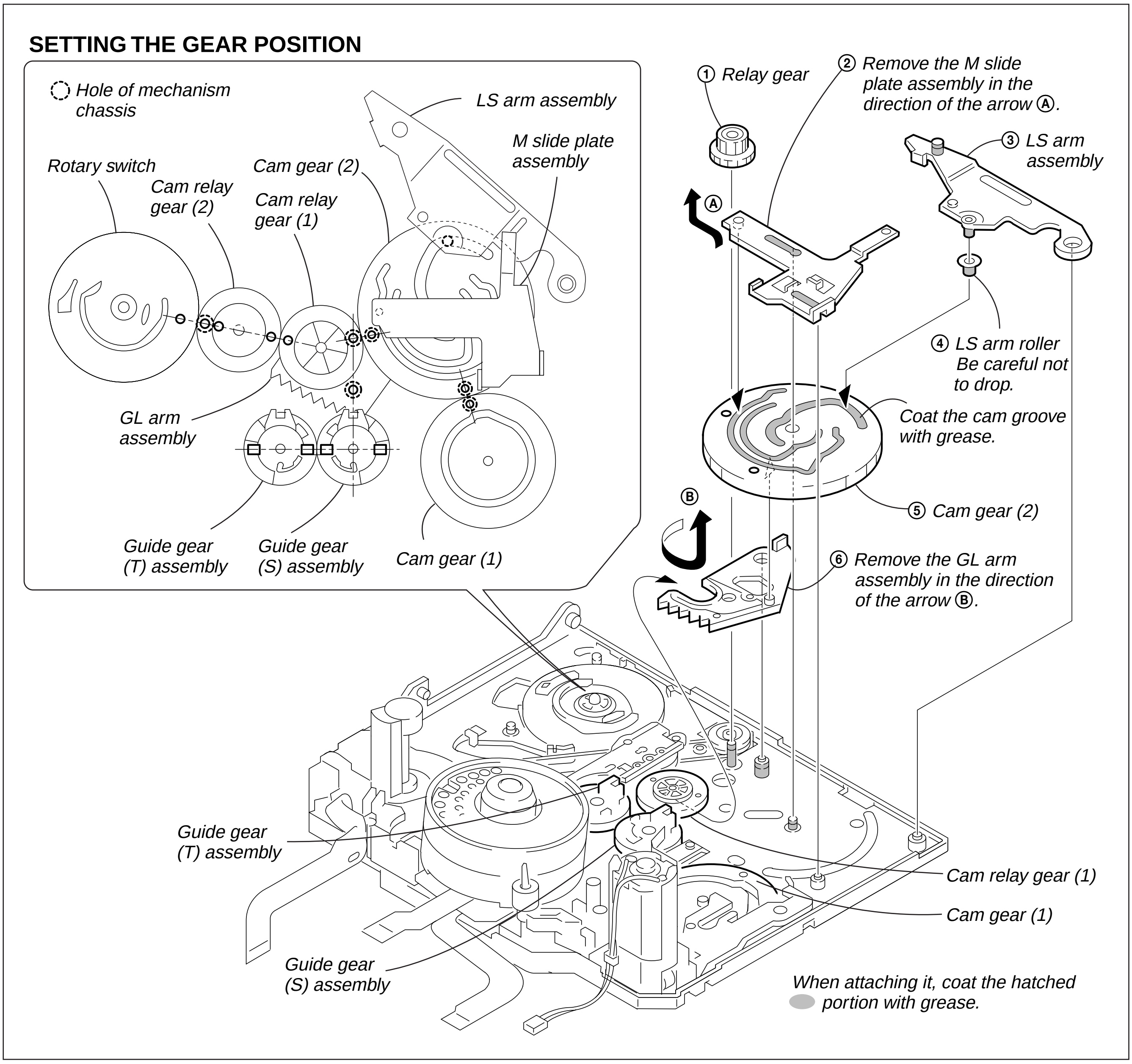

SETTING THE GEAR POSITION
Hole of mechanism chassis
LS arm assembly
M slide plate assembly
Rotary switch
Cam relay gear (2)
Cam gear (2)
Cam relay gear (1)
GL arm assembly
Guide gear (T) assembly
Guide gear (S) assembly
Cam gear (1)
① Relay gear
② Remove the M slide plate assembly in the direction of the arrow Ⓐ.
③ LS arm assembly
Ⓐ
④ LS arm roller Be careful not to drop.
Coat the cam groove with grease.
Ⓑ
⑤ Cam gear (2)
⑥ Remove the GL arm assembly in the direction of the arrow Ⓑ.
Guide gear (T) assembly
Cam relay gear (1)
Cam gear (1)
Guide gear (S) assembly
When attaching it, coat the hatched portion with grease.

Fig. 4-19.

5. Adjustment

5-1. Check and Adjustment of TG1 Back-tension Position

1. Check Procedure

1) Assemble the mechanism deck into the main unit.
2) Thread a normal tape and let the machine enter the PB (or REC) mode.
3) Check that the distance between the upper flange of the TG1 guide and the side surface of the LS chassis block is 12.0 ± 0.4 mm (range of fluctuation: 0.5 mm or less).

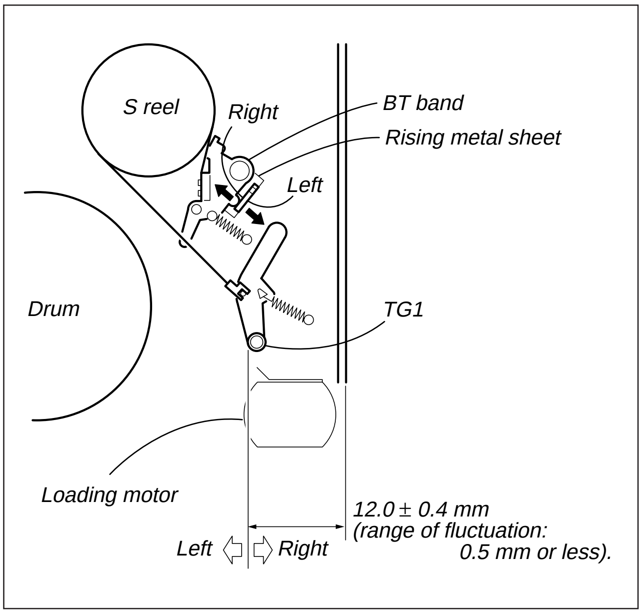

S reel
Right
BT band
Rising metal sheet
Left
Drum
TG1
Loading motor
12.0 ± 0.4 mm
(range of fluctuation:
0.5 mm or less).
Left
Right

Fig. 5-1.

2. Adjustment Procedure

1) Remove the cassette compartment and the blind plate.
2) Adjust the position of the TG1 guide by changing the tilt of the rising metal sheet of the LS chassis block assembly.

5-2. Check and Adjustment of FWD/RVS Back-tension

1. Check Procedure

1) Install the mechanism deck in the main unit and set the take-up torque cassette (Ref. No. J-7).
2) Check the FWD/RVS take-up torque.
   Check the FWD torque in the PLAY state.
   Specified value: 7 to 12 gf•cm
   Check the RVS torque in the RVS state.
   Specified value: 19.5 to 29.5 gf•cm

2. Adjustment Procedure

1) If the value of the FWD torque is larger than the specifications, change the position where the TG1 arm spring is hooked in the direction of the arrow Ⓐ. If the value of the FWD torque is smaller than the specifications, change the position in the direction of the arrow Ⓑ.

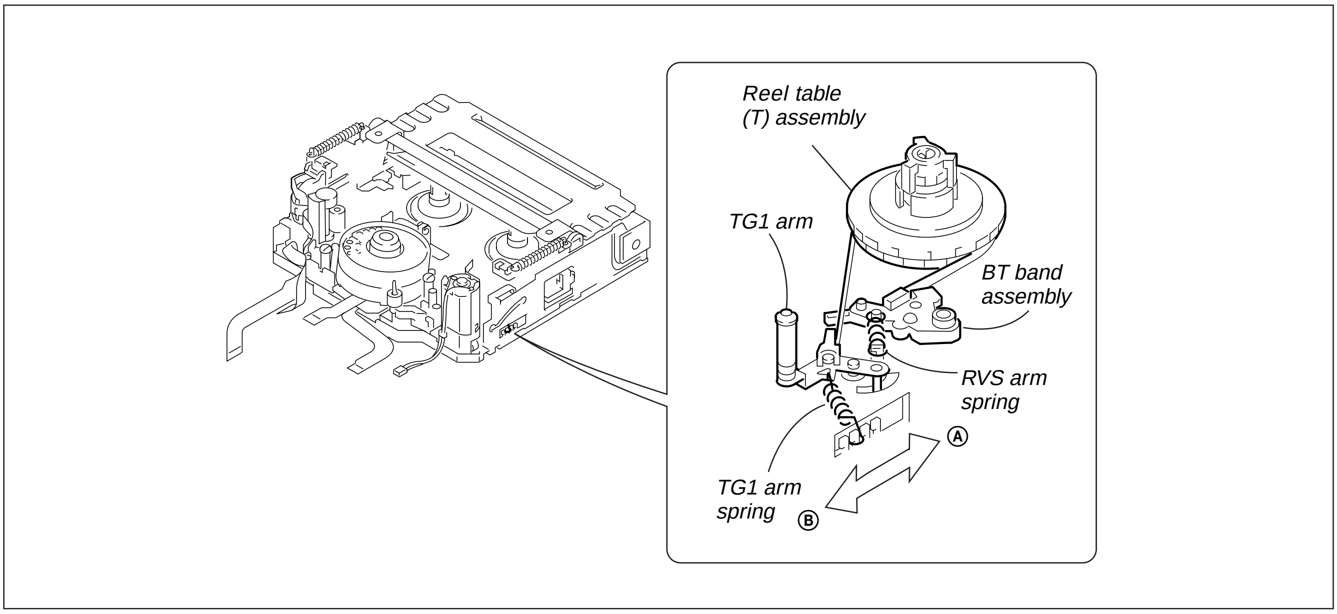

Reel table
(T) assembly
TG1 arm
BT band
assembly
RVS arm
spring
Ⓐ
TG1 arm
spring
Ⓑ

Fig. 5-2.

5-3. Capstan Motor Azimuth Position Adjustment

1. Check Procedure

1) Insert the thickness gauge (Ref. No. J-16) of 0.75 mm between the protrusion of the mechanism chassis and the capstan motor, and check the azimuth position.

2. Adjustment Procedure

1) Loosen the capstan azimuth adjustment screw (SANG camera pan 2 M1.4 × 4.5), and insert the thickness gauge (0.75 mm)(Ref. No. J-16) between the protrusion of the mechanism chassis and the capstan motor.
2) Slowly tighten the capstan azimuth adjustment screw until it slightly contacts the thickness gauge, and remove the thickness gauge.

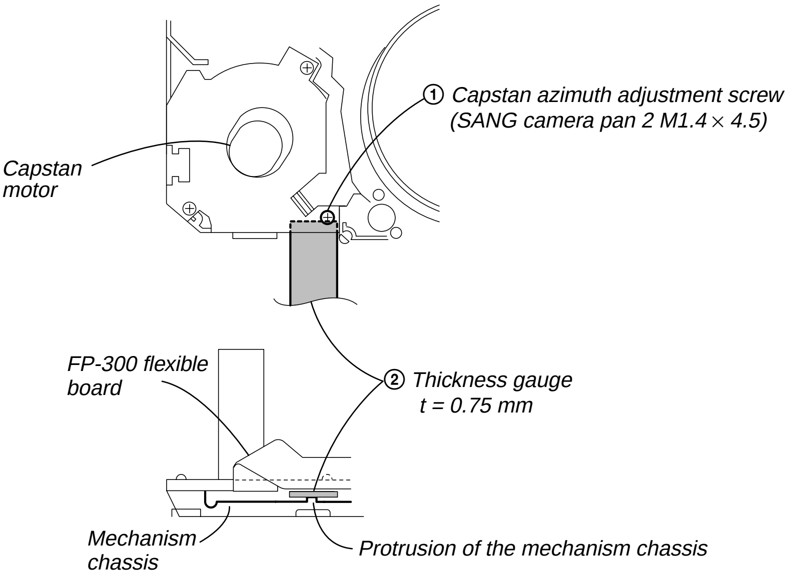

① Capstan azimuth adjustment screw
(SANG camera pan 2 M1.4 × 4.5)
Capstan motor
FP-300 flexible board
② Thickness gauge
t = 0.75 mm
Mechanism chassis
Protrusion of the mechanism chassis

Fig. 5-3.

5-4. Tape Path Adjustment

Purpose: Adjust the linearity of the head.

If the adjustment is not correct:

Noise appears on the top and bottom of the screen when playing back the tape that is recorded by other recorders.

5-4-1. Adjustment Preparation

1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the remote terminal.
3) Set the adjustment remote commander to the PATH mode (track shift mode)* and release the auto tracking.
4) Connect an oscilloscope as follows:
   CH1: Test connector' PB RF terminal
   External trigger: Test connector' RF SWP terminal
5) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
6) Confirm that the RF waveform on scope is flat both at entrance side and exit side.
   If the RF waveform is not flat, perform the adjustment by referring to section 4-2.)
7) After the adjustment is completed, release the PATH mode (track shift mode)*.

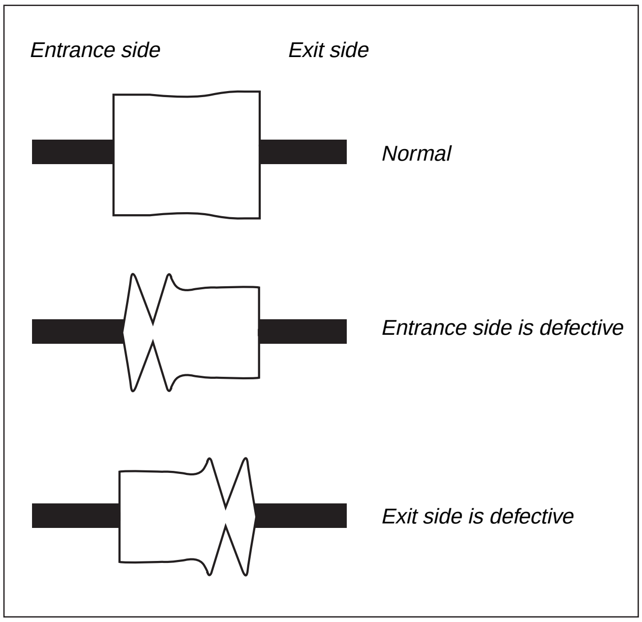


Fig. 5-4.

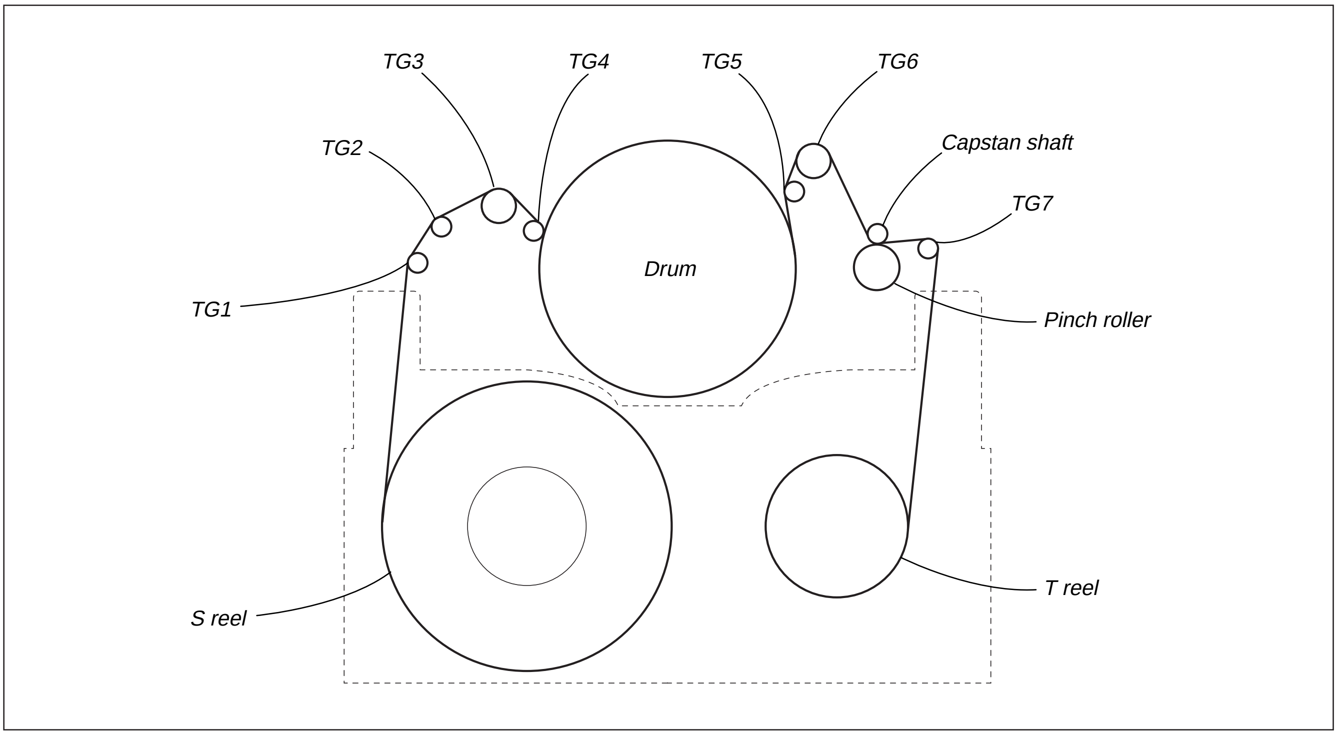


Fig. 5-5.

* **Setting and releasing the track shift mode**

In case of the DCR-TRV230

Setting

1. Select page: 0, address: 01 and set data: 01.
2. Select page: F, address: 22 and set data: 88, and press the PAUSE button.
3. Select page: 2, address: 2E and set data: 02. (Note)

Releasing

1. Select page: 0, address: 01 and set data: 01.
2. Select page: F, address: 22 and set data: 80, and press the PAUSE button.
3. Select page: 2, address: 2E and set data: 00.
4. Select page: 0, address: 01 and set data: 00. (Note)

Note: In case of the Digital8 only, set the data of page: 2, address: 2E.

5-4-2. Tracking Adjustment (Refer to Fig. 5-6.)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
2) Adjust the No.3 guide until the envelope at the entrance side waveform becomes flat.
3) Adjust the No.6 guide until the envelope at the exit side waveform becomes flat.

☆ The TG-3/6 zenith adjustment screws do not need to be adjusted.

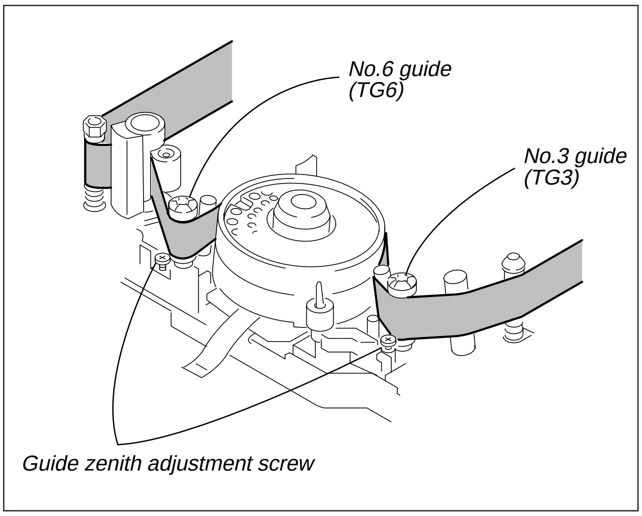

No.6 guide (TG6)
No.3 guide (TG3)
Guide zenith adjustment screw

Fig. 5-6.

5-4-3. No.7 Guide (TG7) Adjustment (Refer to Fig. 5-7.)

1) Playback the tape and set the REV mode.
2) Confirm that tape slack does not occur in between the No.6 guide (TG6) ① and capstan ②. If any tape slack occurs, rotate the TG7 nut ④ of the No.7 guide (TG7) ③ to remove the tape slack.
3) Playback the tape again and confirm that tape slack does not occur between the capstan ② and No.7 guide (TG7) ③. If the tape slack occurs exceeding the specifications (specifications: 0.5 mm or less), rotate the TG7 nut ④ to make the tape slack below the specifications (0.5 mm). When the tape slack between the No.6 guide (TG6) ① and capstan ② is 0.3 mm or less in the REV mode, it means that the adjustment is completed.

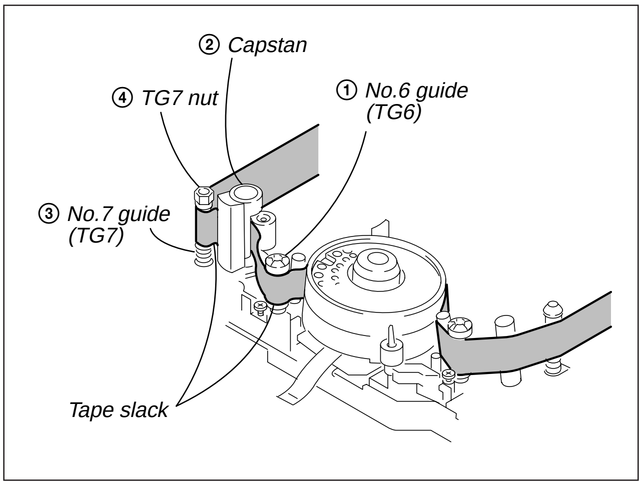

② Capstan
④ TG7 nut
① No.6 guide (TG6)
③ No.7 guide (TG7)
Tape slack

Fig. 5-7.

5-4-4. CUE and REV Waveform Check (Refer to Fig. 5-8)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6) and enter the REV mode.
   Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more.
   If pitches between peaks of the RF waveform are not equal, perform sections “5-4-2 Tracking Adjustment” and “5-4-3 No. 7 Guide (TG7) Adjustment”.
2) Enter the UCE mode. Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more.
   If pitches between peaks of the RF waveform are not equal, perform section “5-4-2 Tracking Adjustment”.

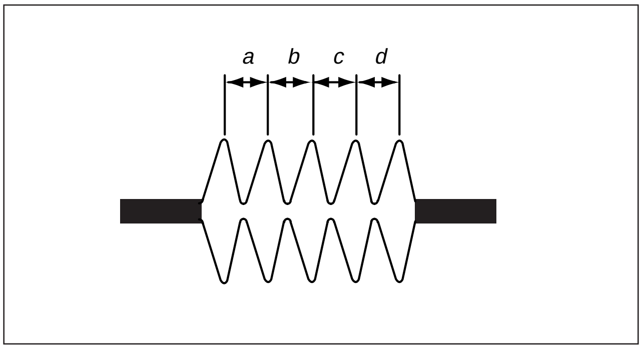


Fig. 5-8.

5-4-5. Check upon Completion of Adjustment

5-4-5-1. Tracking Check

1) Playback the tracking alignment tape in the PATH mode. Compare the amplitude of the RF waveform in the AUTO tracking mode and with that in the PATH mode. Confirm that the amplitude of the RF waveform decreases to about 3/4 when the tracking alignment tape is switched from the AUTO tracking mode to the PATH mode. (Refer to Fig. 5-9)
2) During step 1, confirm that the minimum amplitude (E MIN) is 65% or more of the maximum amplitude (E MAX) of the RF waveform. (Refer to Fig. 5-10)
3) Confirm that the RF waveform does not fluctuate too excessively.(Refer to Fig. 5-11)

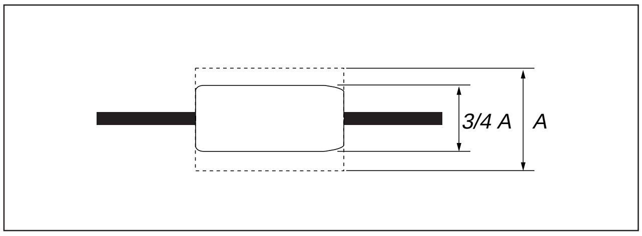
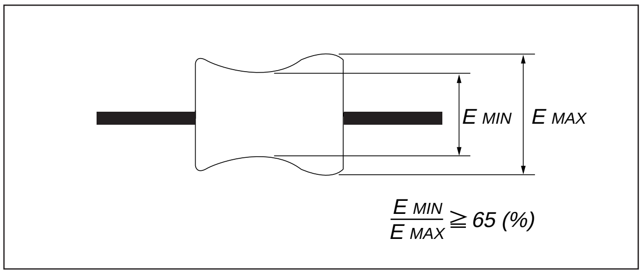
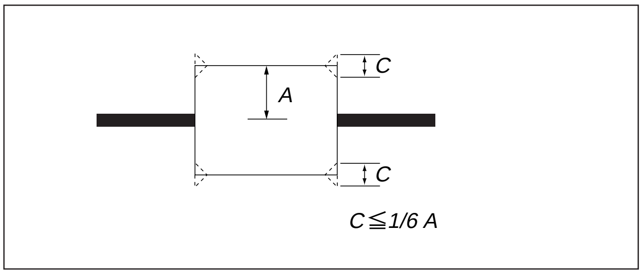


Fig. 5-9.



$$\frac{E_{MIN}}{E_{MAX}} \geqq 65\ (\%)$$

Fig. 5-10.



C≦1/6 A

Fig. 5-11.

5-4-5-2. Rise-up Check (Refer to Fig. 5-12)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6).
2) Turn OFF the Track Shift mode.
3) Eject the cassette tape once. Then insert the cassette tape for loading again.
4) Confirm that the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
5) Run the tape in the CUE/REV and the FF/REW mode. Then playback the tracking alignment tape and confirm the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
6) Repeat the above steps 3) to 5) once again for re-check.

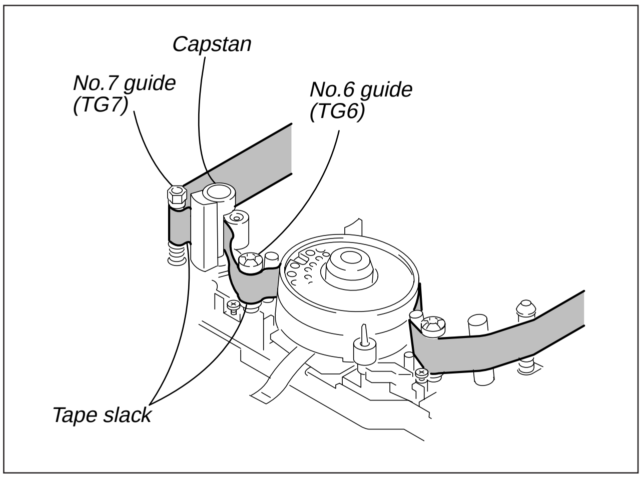


Fig. 5-12.

5-4-5-3. Tape Run Check (Refer to Fig. 5-13)

1) Playback the thin video tape such as P6-120MP (NTSC), P6-90MP (PAL). Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the top flange of the No. 3 guide (TG3), at the top flange of the No. 6 guide (TG6) and at both the top and bottom flanges of the No. 7 guide (TG7).
2) Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the flanges of the respective guide when the FF button is pressed during PLAY mode to enter the CUE mode and when the REW button is pressed during PLAY mode to enter the REV mode.

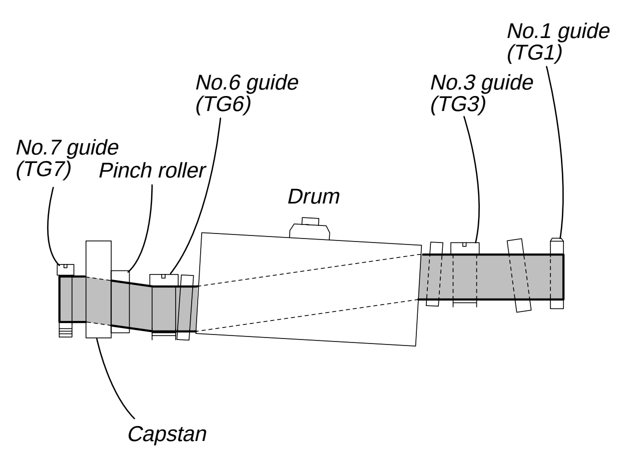
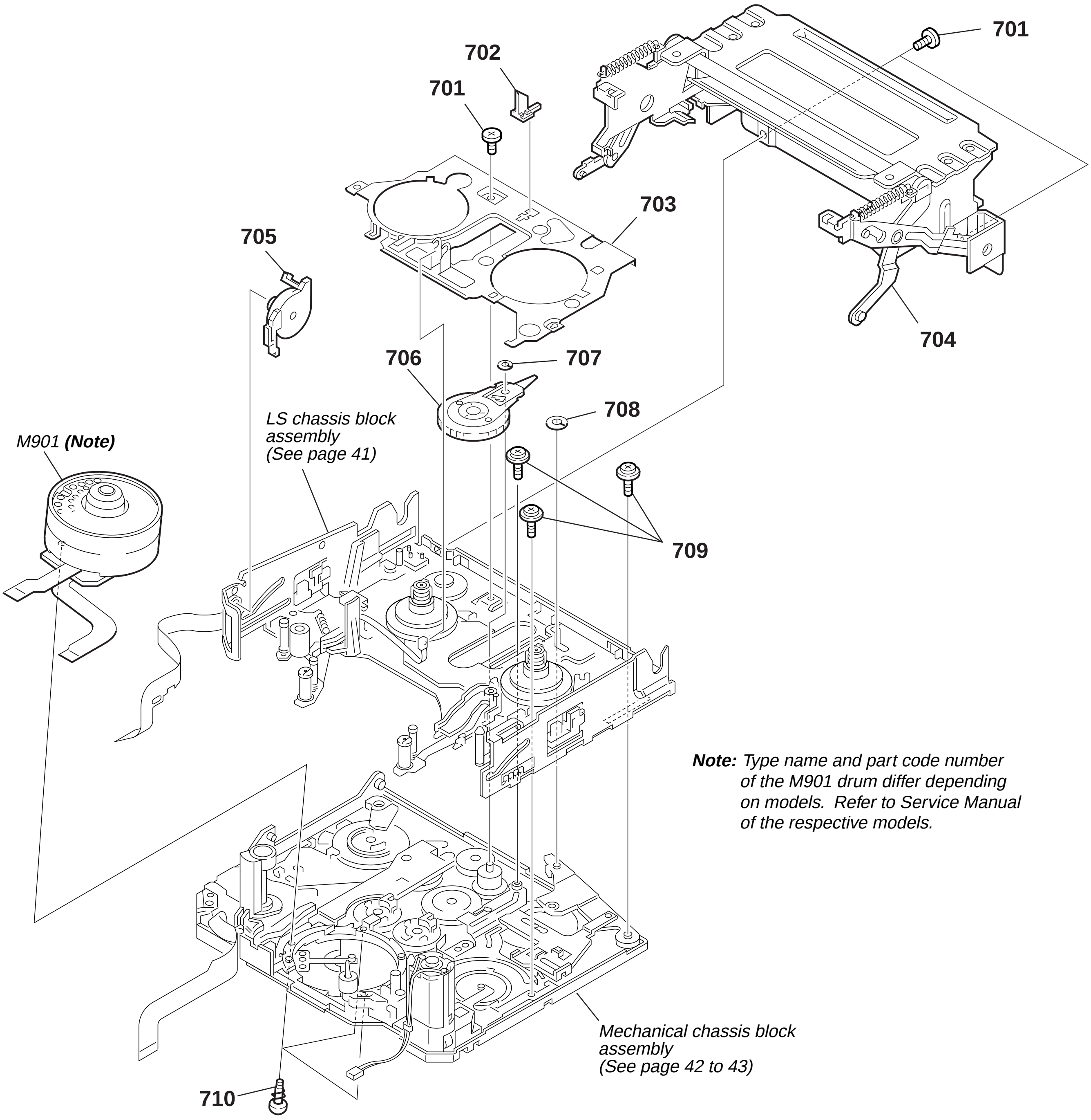


Fig. 5-13.

6. Exploded Views

6-1. Cassette Compartment Assy, Drum Assy

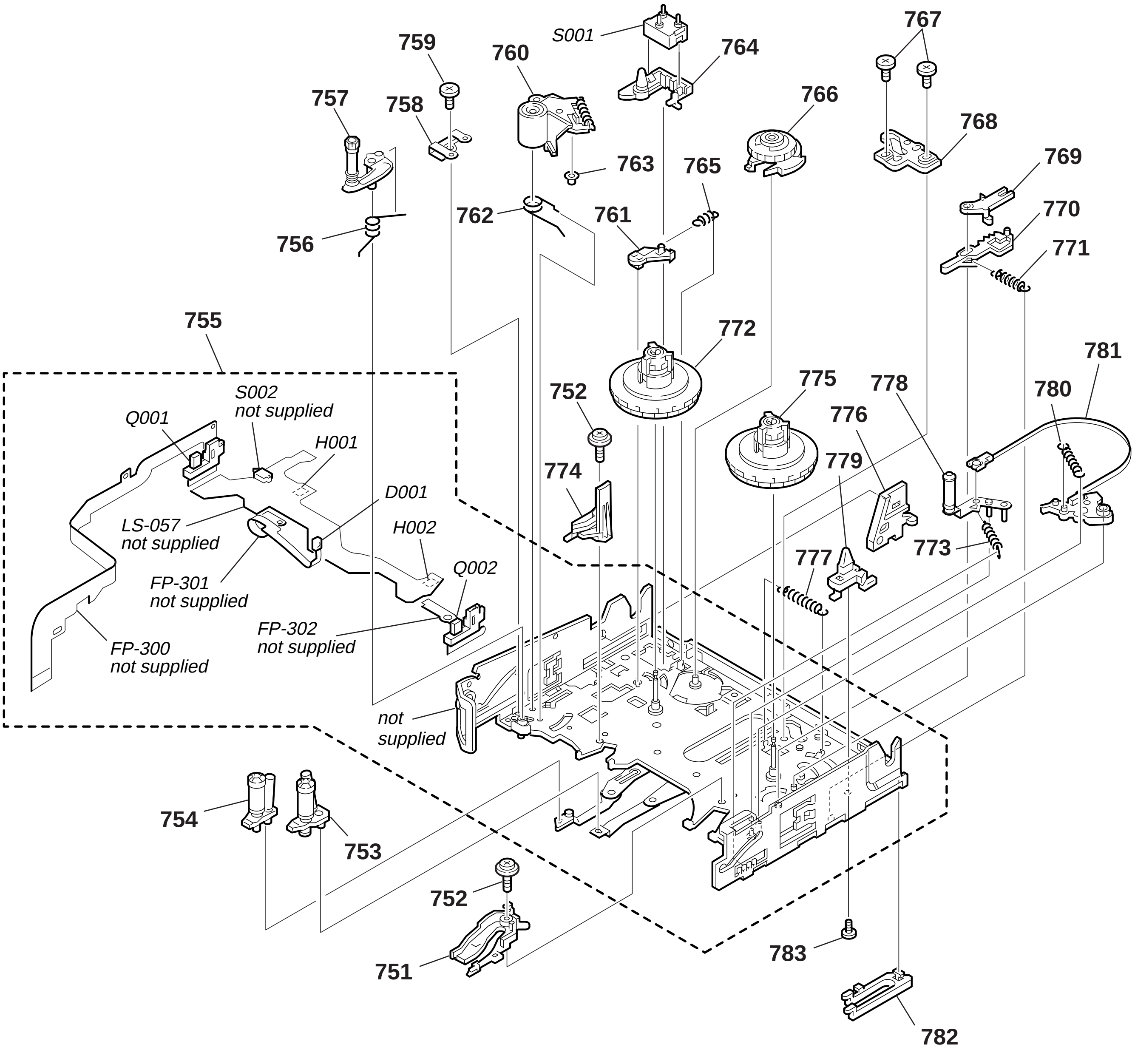

701
702
701
703
705
704
706
707
708
LS chassis block assembly (See page 41)
M901 **(Note)**
709
Mechanical chassis block assembly (See page 42 to 43)
710

Note: *Type name and part code number of the M901 drum differ depending on models. Refer to Service Manual of the respective models.*

Ref. No.	Part No.	Description	Remarks
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
702	3-065-895-01	LEVER, REEL RELEASE	
703	3-065-896-01	PLATE, BLIND	
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY	
705	X-3951-302-1	DAMPER ASSY	
706	X-3951-297-1	GEAR ASSY, R DRIVE	

Ref. No.	Part No.	Description	Remarks
707	3-065-840-01	CUT (0.98X3X0.13), LUMILER (W)	
708	3-065-935-01	HLC CUT (1.8X4X0.5)	
709	3-947-503-01	SCREW (M1.4)	
710	X-3951-299-1	SCREW ASSY, DRUM FITTING	
M901	— Note —	DRUM	

6-2. LS Chassis Block Assembly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S001
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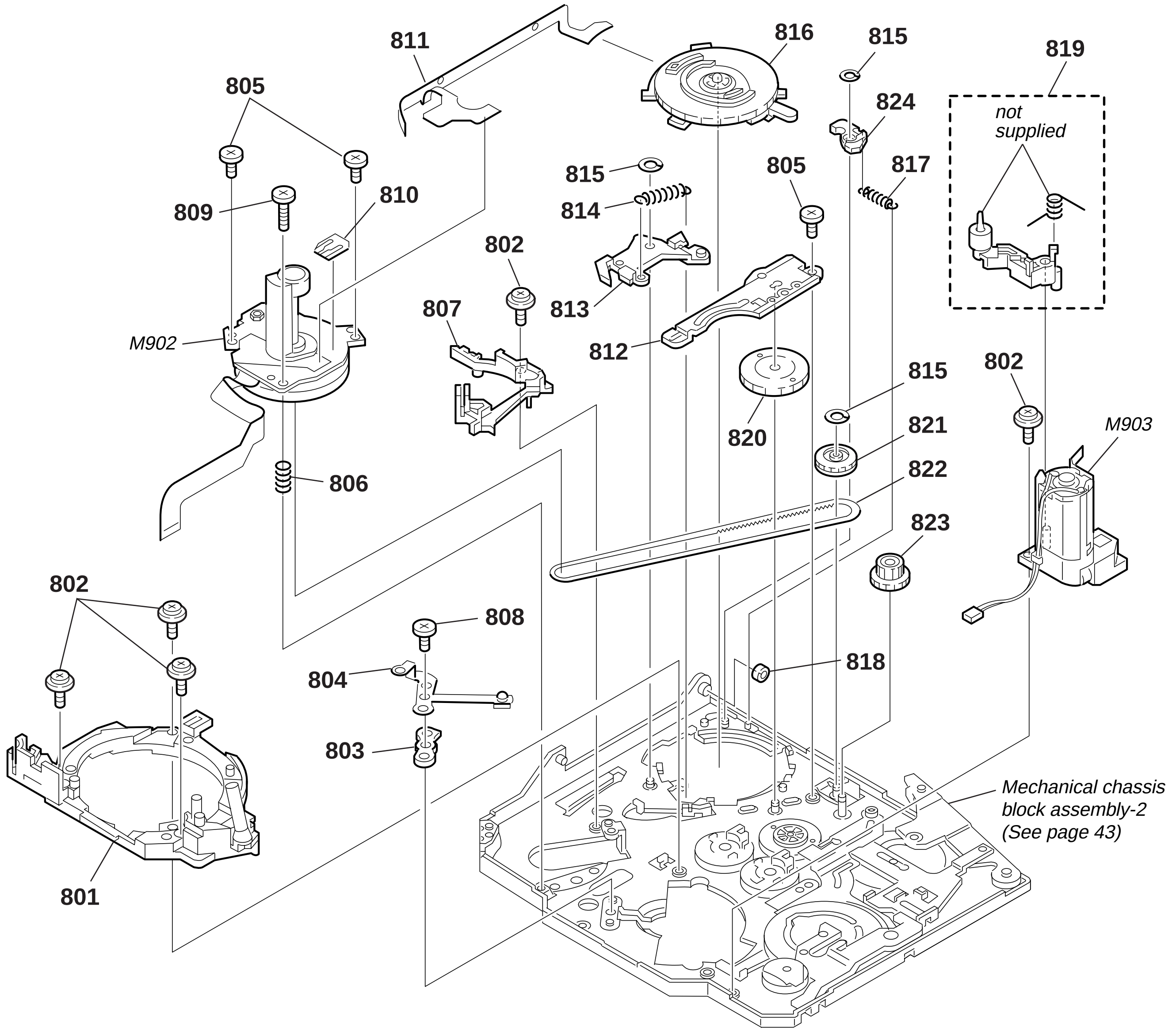
772
781
752
775
778
780
S002
not supplied
Q001
776
H001
774
779
D001
LS-057
not supplied
H002
773
777
FP-301
not supplied
Q002
FP-302
not supplied
FP-300
not supplied
not
supplied
754
753
752
751
783
782

Ref. No.	Part No.	Description	Remarks
751	3-065-822-01	RAIL (S), GUIDE	
752	3-947-503-01	SCREW (M1.4)	
753	A-7096-416-A	BASE (S) BLOCK ASSY, GUIDE	
754	A-7096-415-A	BASE (T) BLOCK ASSY, GUIDE	
755	A-7096-426-A	CHASSIS ASSY, LS	
756	3-065-802-01	SPRING, TG7 ARM	
757	A-7096-414-A	ARM BLOCK ASSY, TG7	
758	3-065-801-01	RETAINER, TG7	
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
760	X-3951-303-1	ARM ASSY, PINCH	
761	3-065-823-01	ARM, T RATCHET	
762	3-065-794-01	ROAD (SPR), PINCH ARM	
763	3-065-792-01	ROLLER, P LIM ARM	
764	3-065-834-01	GUIDE (T), CASSETTE	
765	3-065-824-01	SPRING, T RATCHET	
766	A-7096-417-A	SOFT ASSY, T	
767	7-627-852-38	SCREW,PRECISION +P1.7X1.8 TYPE3	
768	3-065-832-01	PLATE, LS CAM	
769	3-065-828-01	ARM, S RATCHET	
770	3-065-829-01	PLATE, S RATCHET (RE)	
771	3-065-830-01	SPRING, S RATCHET	
772	X-3951-288-1	TABLE (T) ASSY, REEL	
773	3-065-819-01	SPRING, TG1 ARM	
774	3-065-821-01	RAIL (T), GUIDE	
775	X-3951-289-1	TABLE (S) ASSY, REEL	
776	3-065-833-01	GUIDE, LOCK	
777	3-065-831-01	PLATE (SPR), RE RETURN	
778	X-3951-304-1	ARM ASSY, TG1	
779	3-065-835-01	GUIDE (S), CASSETTE	
780	3-065-820-01	SPRING, RVS ARM	
781	X-3951-296-1	BAND (ASSY), BT	
782	3-065-836-01	COVER, LS GREASE	
783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING	
D001	8-719-988-42	DIODE GL453 (TAPE LED)	
H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	
S001	1-692-614-11	SWITCH, PUSH (3 KEY) (REC PROOF)	

6-3. Mechanical Chassis Block Assembly-1


811
816
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824
not supplied
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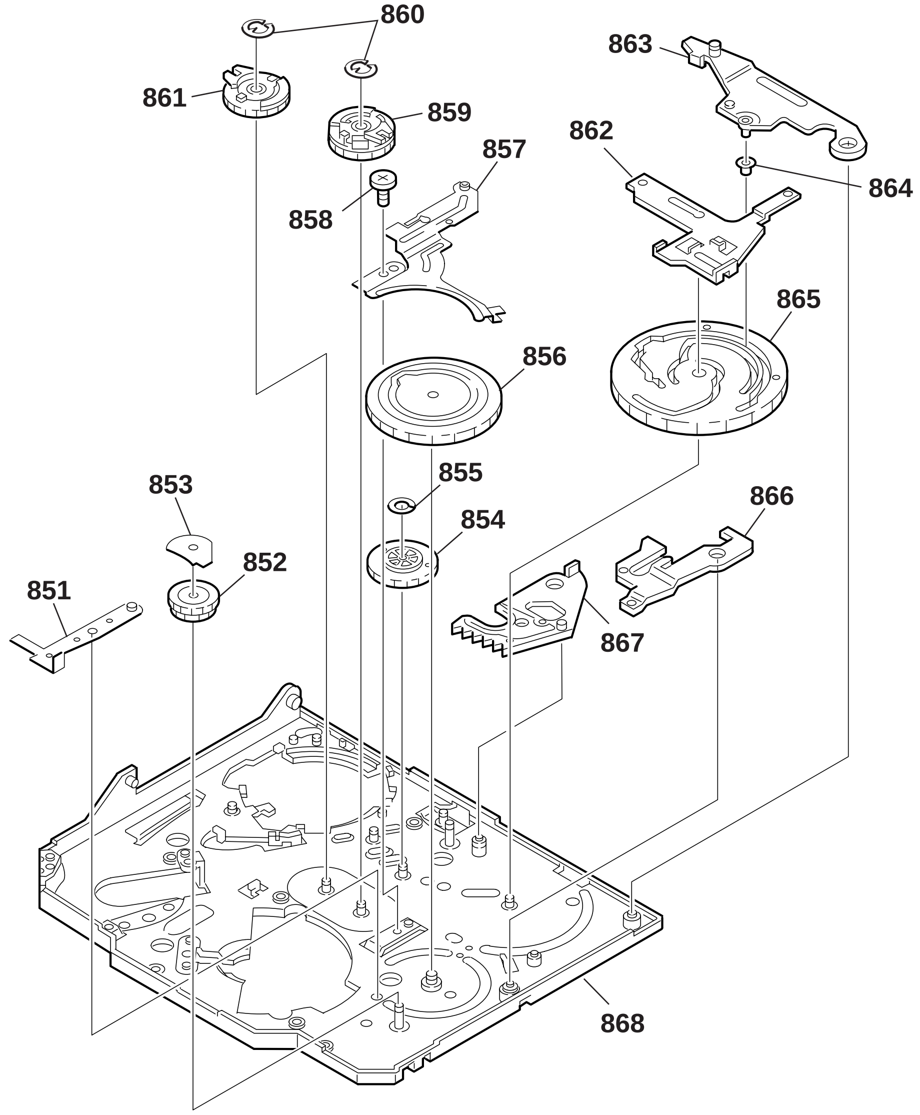
810
814
802
807
813
M902
812
815
802
820
821
M903
806
822
823
802
808
818
804
803
Mechanical chassis block assembly-2 (See page 43)
801

Ref. No.	Part No.	Description	Remarks
801	A-7096-422-A	BASE ASSY, DRUM	
802	3-947-503-01	SCREW (M1.4)	
803	3-065-928-01	SPACER, GROUND	
804	3-065-927-01	GROUND, DRUM	
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
806	3-067-154-01	SPRING, CAPSTAN	
807	3-065-931-01	RAIL (T2), GUIDE	
808	X-3947-398-1	SCREW ASSY, M1.7 PW	
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA	
810	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)	
811	1-680-434-11	FP-299 FLEXIBLE BOARD	
812	3-065-877-01	PLATE (T), GUIDE LOCK	
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE	

Ref. No.	Part No.	Description	Remarks
814	3-065-881-01	SPRING, P PRESSURE PLATE	
815	3-065-934-01	HLW CUT 0.98X3X0.25	
816	1-786-096-11	SWITCH, ROTARY	
817	3-065-898-01	SPRING, EJECT ARM	
818	3-065-870-01	ROLLER, LS GUIDE	
819	A-7096-421-A	ARM ASSY, HCL	
820	3-065-918-01	GEAR (2), CAM RELAY	
821	A-7096-419-A	GEAR ASSY, CHANGE	
822	3-065-902-01	BELT, TIMING	
823	3-065-905-01	GEAR, RELAY	
824	3-065-882-01	ARM, EJECT	
M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)	
M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)	

6-4. Mechanical Chassis Block Assembly-2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864
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865
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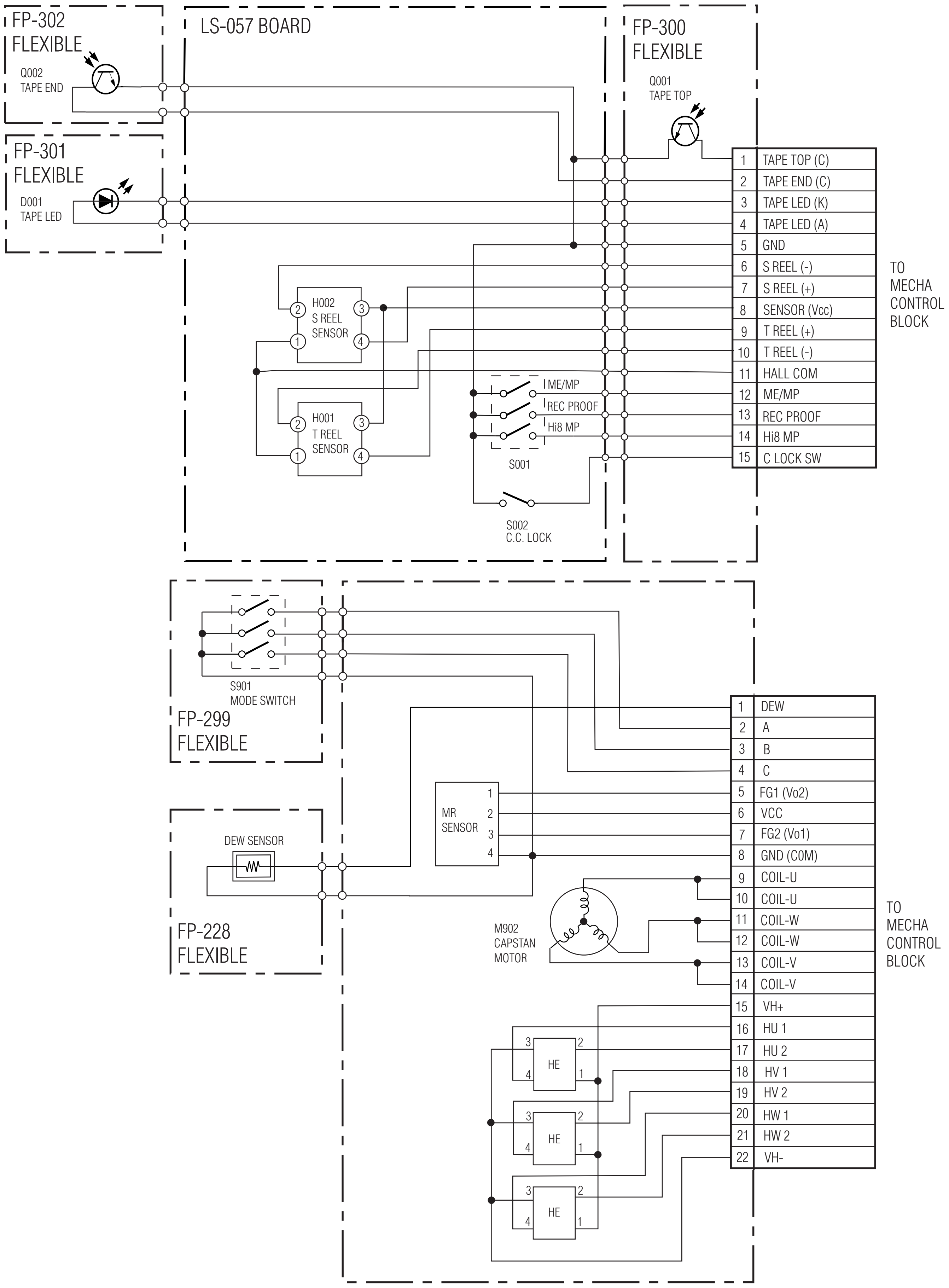
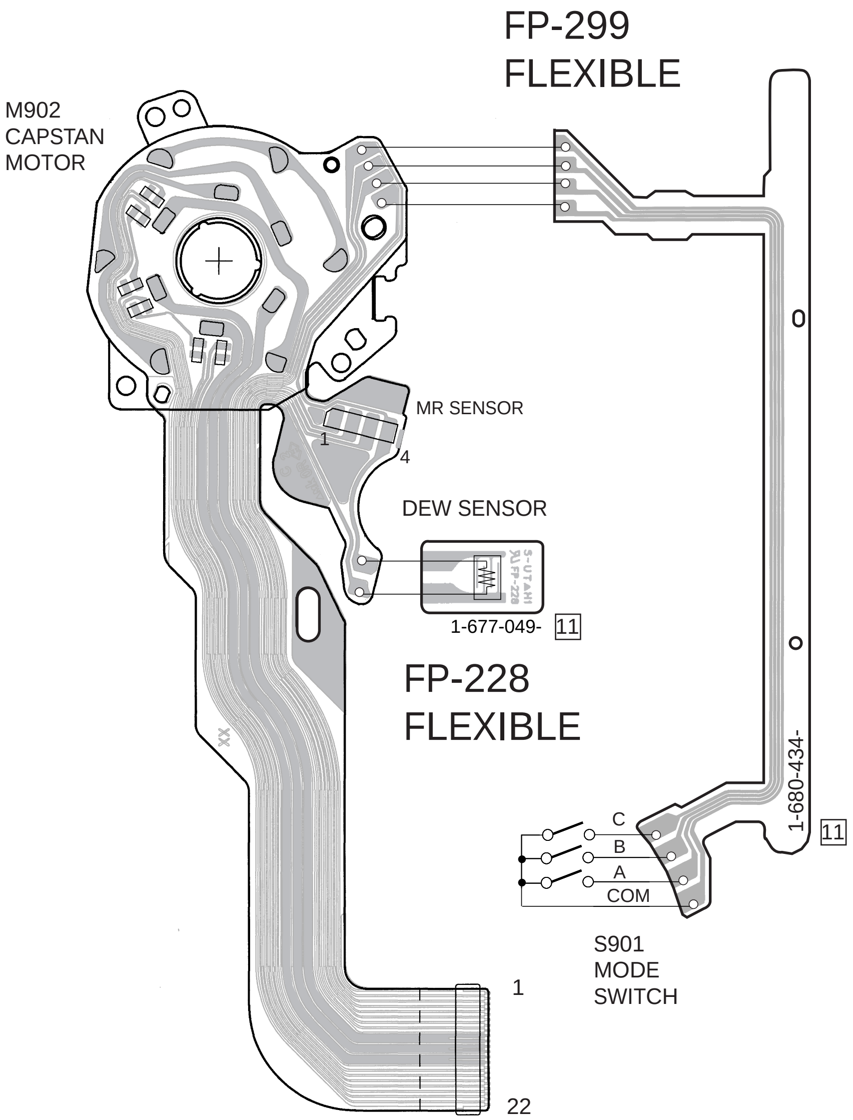
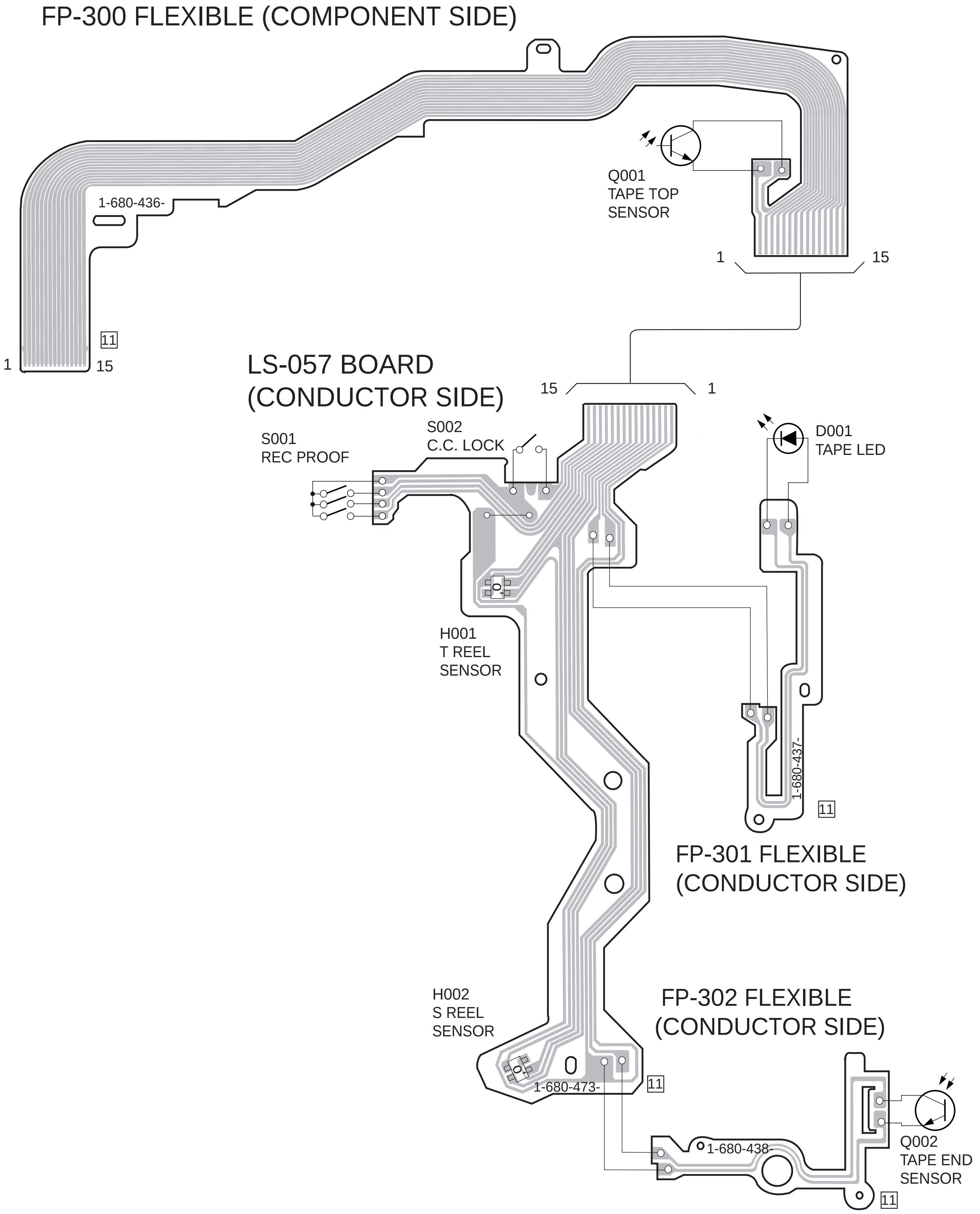
867
868

Ref. No.	Part No.	Description	Remarks
851	3-065-920-01	ARM, HC DRIVE	
852	3-065-913-01	GEAR (4), LD	
853	3-065-914-01	SHEET, COVER	
854	3-065-917-01	GEAR (1), CAM RELAY	
855	3-065-934-01	HLW CUT 0.98X3X0.25	
856	3-065-915-01	GEAR (1), CAM	
857	3-065-878-01	PLATE (S), GUIDE LOCK	
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
859	A-7096-413-A	GEAR (S) ASSY, GUIDE	
860	7-624-101-04	STOP RING 1.2 (E TYPE)	
861	A-7096-412-A	GEAR (T) ASSY, GUIDE	
862	X-3951-307-1	PLATE ASSY, M SLIDE	
863	X-3951-305-1	ARM ASSY, LS	
864	3-065-901-01	ROLLER, LS ARM	
865	3-065-916-01	GEAR (2), CAM	
866	3-065-919-01	ARM, T1 LIMITTER	
867	X-3951-308-1	ARM ASSY, GL	
868	X-3951-300-1	CHASSIS ASSY, MECHANICAL	

7. Printed Wiring Boards and Schematic Diagrams


FP-302
FLEXIBLE
Q002
TAPE END
FP-301
FLEXIBLE
D001
TAPE LED
LS-057 BOARD
FP-300
FLEXIBLE
Q001
TAPE TOP
H002
S REEL
SENSOR
H001
T REEL
SENSOR
ME/MP
REC PROOF
Hi8 MP
S001
S002
C.C. LOCK
1 TAPE TOP (C)
2 TAPE END (C)
3 TAPE LED (K)
4 TAPE LED (A)
5 GND
6 S REEL (-)
7 S REEL (+)
8 SENSOR (Vcc)
9 T REEL (+)
10 T REEL (-)
11 HALL COM
12 ME/MP
13 REC PROOF
14 Hi8 MP
15 C LOCK SW
TO
MECHA
CONTROL
BLOCK
S901
MODE SWITCH
FP-299
FLEXIBLE
DEW SENSOR
FP-228
FLEXIBLE
MR
SENSOR
M902
CAPSTAN
MOTOR
HE
1 DEW
2 A
3 B
4 C
5 FG1 (Vo2)
6 VCC
7 FG2 (Vo1)
8 GND (COM)
9 COIL-U
10 COIL-U
11 COIL-W
12 COIL-W
13 COIL-V
14 COIL-V
15 VH+
16 HU 1
17 HU 2
18 HV 1
19 HV 2
20 HW 1
21 HW 2
22 VH-
TO
MECHA
CONTROL
BLOCK


FP-299
FLEXIBLE
M902
CAPSTAN
MOTOR
MR SENSOR
1
4
DEW SENSOR
1-677-049- 11
FP-228
FLEXIBLE
1-680-434- 11
C
B
A
COM
S901
MODE
SWITCH
1
22


FP-300 FLEXIBLE (COMPONENT SIDE)
1-680-436-
Q001
TAPE TOP
SENSOR
1
15
11
1
15
LS-057 BOARD
(CONDUCTOR SIDE)
15
1
S001
REC PROOF
S002
C.C. LOCK
D001
TAPE LED
H001
T REEL
SENSOR
1-680-437-
11
FP-301 FLEXIBLE
(CONDUCTOR SIDE)
H002
S REEL
SENSOR
FP-302 FLEXIBLE
(CONDUCTOR SIDE)
1-680-473-
11
1-680-438-
Q002
TAPE END
SENSOR
11

8mm Video MECHANICAL ADJUSTMENT MANUAL IX

9-929-861-11

Sony Corporation

Personal VIDEO Products Company

2000L1600-1

Printed in Japan © 2000.12

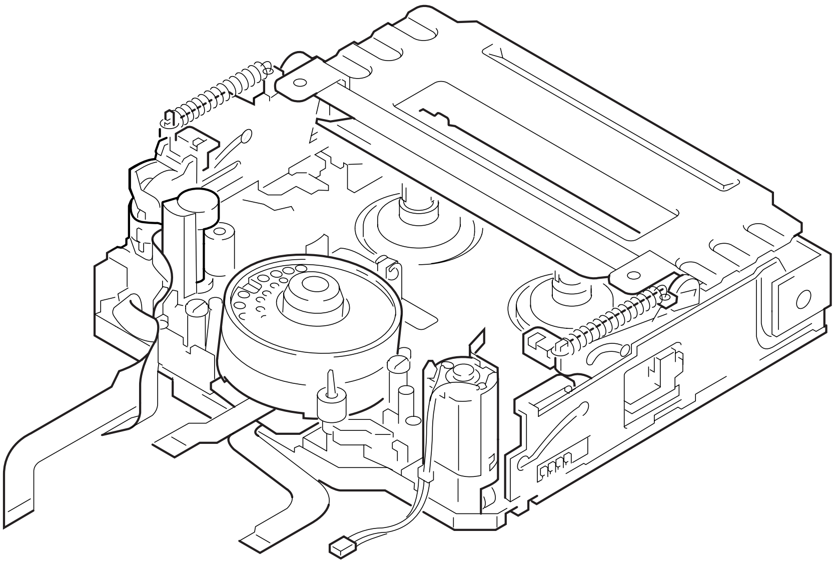
Published by Safety & Service Engineering Dept.

8mm Video MECHANICAL ADJUSTMENT MANUAL Ⅸ

Ver 1.0 2000. 12

M2000 MECHANISM

Please use this manual with the service manual of the respective models.



Digital 8 MECHANISM DECK

SONY®

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1. Preparations for Check, Adjustment and Replacement of Mechanism Block

Before Replacement, Check or Adjustment

- Refer to the “DISASSEMBLY” section of the SERVICE MANUAL of the respective models for details of removing cabinets and printed wiring boards.
- When checking a mechanism ir making any adjustment to the mechanism or replacing mechanical parts, be sure to use the Mode Selector II and select the appropriate status of the mechanical deck such that the mechanical status is suitable for the desired work. Refer to section “1-2. Mode Selector II Operating Procedure” for details on how to enter the mode shown in a rectangle ▭ mode in the sequent sections of this manual.

* Assemble and adjust the parts in the USE mode if any mode is not specified in this manual.

1-1. Service Jigs and Tools

Ref. No.	Name		Part code	Jig inscription	Used for
J-1	Cleaning fluid		Y-2031-001-0		
J-2	Wiping cloth		7-741-900-53		
J-3	Super-fine applicator (made by Nippon Applicator (P752D))				
J-4	Head eraser		commercially available		Tape path
J-5	Mirror (small oval type)		J-6080-840-A	GD-2038	Tape path
J-6	Alignment tape	NTSC : WR5-1NP	8-967-995-02		For tracking adjustment
		PAL : WR5-1CP	8-967-995-07		
J-7	FWD/RVS take-up torque cassette		J-6080-824-A	GD-2086	
J-8	Tape path screwdriver		J-6082-026-A		For tape guide adjustment
J-9	Adjustment remote commander (RM-95 upgrated)		J-6082-053-B		Tape path (for setting the path mode)(Note)
J-10	MD process table		J-6082-166-A		
J-11	Floil grease		7-662-001-39		
J-12	Torque screwdriver		J-9049-330-A		
J-13	Mode Selector II		J-6082-282-B		
J-14	Mode Selector II conversion board		J-6082-516-A		
J-15	Mode Selector II ROM, Ver 1.6		J-6082-314-E		
J-16	Thickness gauge		9-911-053-00		For capstan azimuth adjustment, LS cam plate position adjustment

Other required equipment:

- Oscilloscope
- Analog tester (20 kΩ)

Note: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

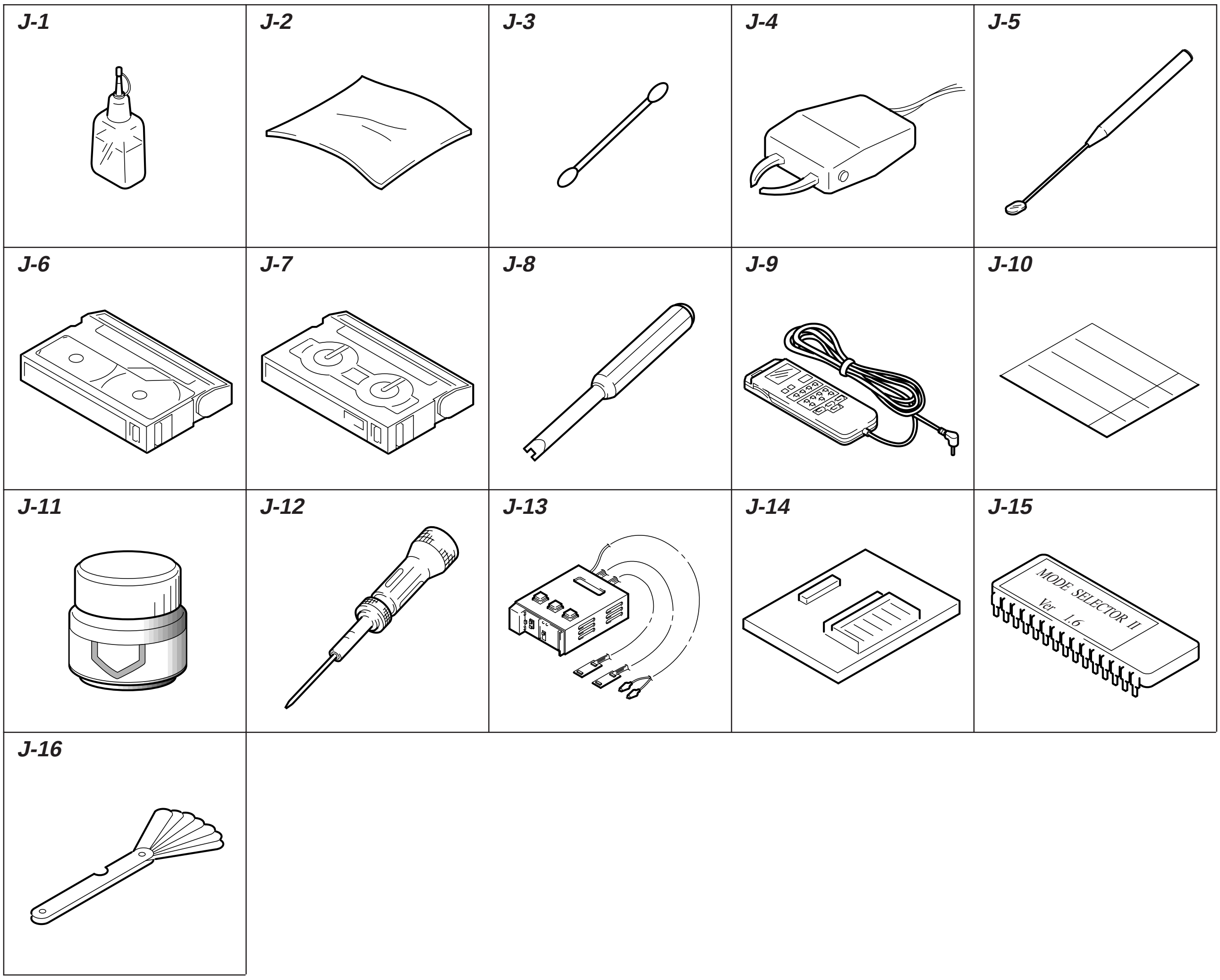

J-1
J-2
J-3
J-4
J-5
J-6
J-7
J-8
J-9
J-10
J-11
J-12
J-13
J-14
J-15
MODE SELECTOR II
Ver 1.6
J-16

Fig. 1-1.

1-2. Mode Selector II Operating Procedure

1-2-1. Introduction

The Mode Selector II is a mechanism drive tool that assists maintenance work of the various mechanism decks. It has the following functions.

1. Manual Test

In this mode, the motor of the mechanism deck is powered only during the period while the switch is turned on manually. Using the Manual Test, the operator can freely control the motor of the mechanism deck.

2. Step Test

In this mode, the motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information. The Step Test is used to confirm a series of movements of the mechanism deck.

3. Auto Test

The Mode Selector II stores the status transition table in its memory as data indicating the respective modes of the mechanism deck. The status transition table can be used to confirm whether a mechanism deck is operating normally or has abnormality from a series of movements of a mechanism deck. If an abnormal status transition is detected during operation, the “NG” indication appears and the mechanism stops moving.

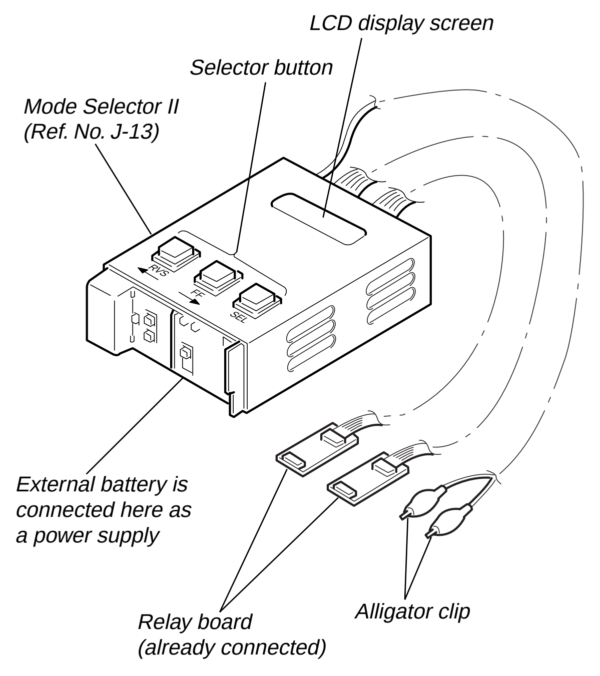

LCD display screen
Selector button
Mode Selector II
(Ref. No. J-13)
RVS
FF
SEL
External battery is
connected here as
a power supply
Relay board
(already connected)
Alligator clip

Fig. 1-2.

Mode Selector II (J-6082-282-B) connection diagram

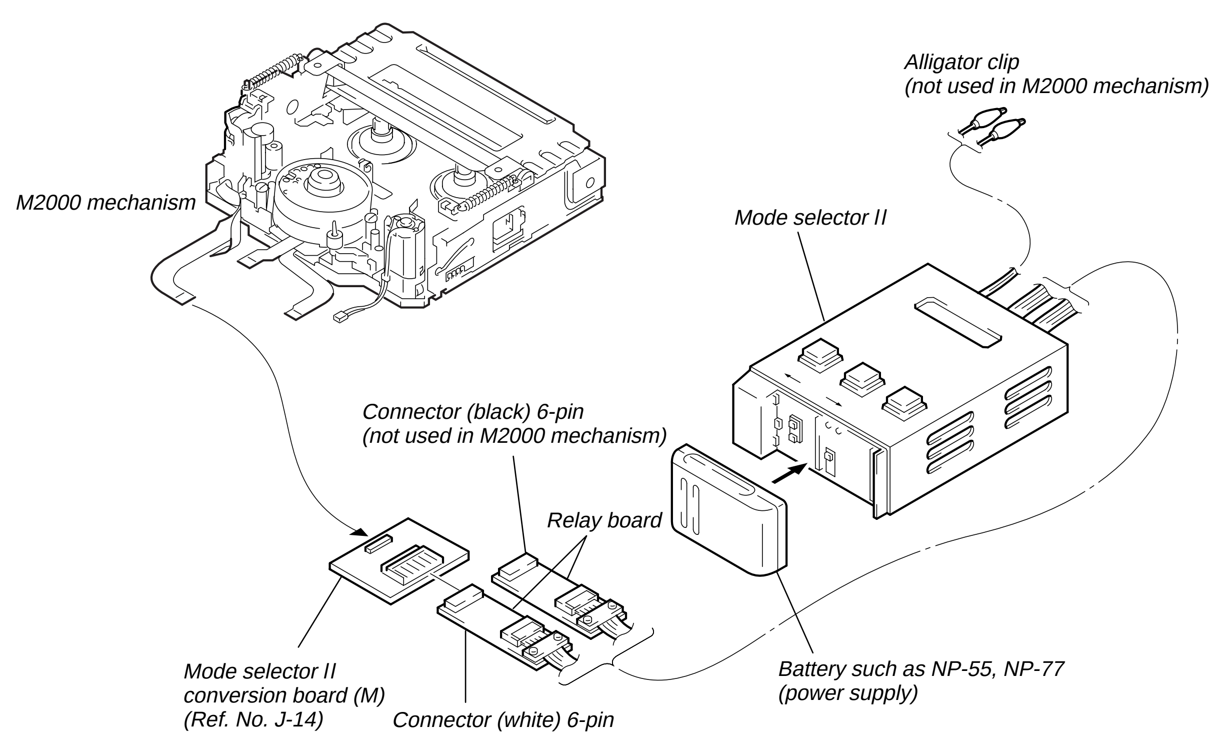
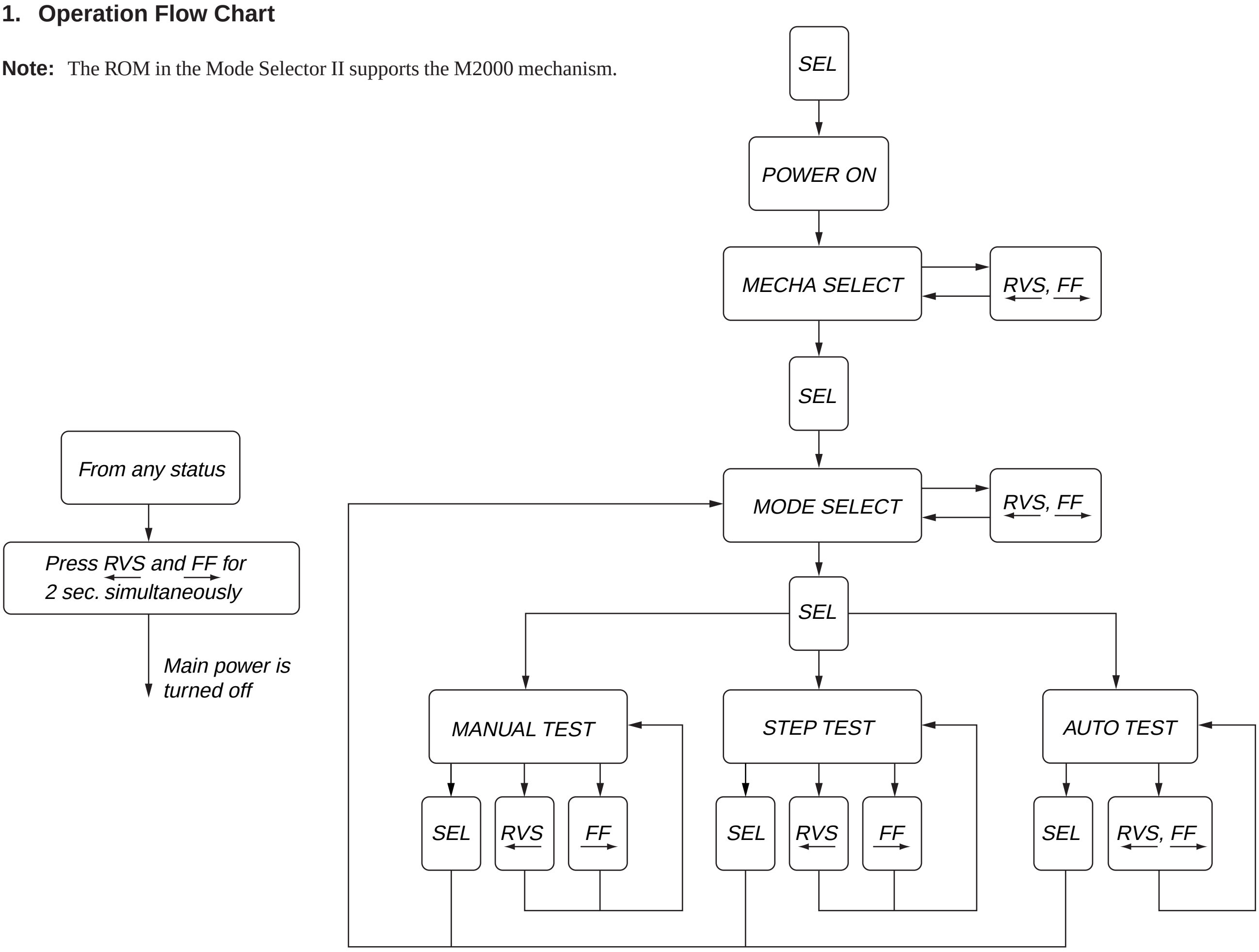

Alligator clip
(not used in M2000 mechanism)
M2000 mechanism
Mode selector II
Connector (black) 6-pin
(not used in M2000 mechanism)
Relay board
Mode selector II
conversion board (M)
(Ref. No. J-14)
Connector (white) 6-pin
Battery such as NP-55, NP-77
(power supply)

Fig. 1-3.

1-2-2. Operation

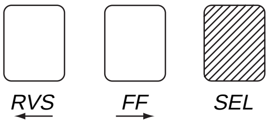
1. Operation Flow Chart

Note: The ROM in the Mode Selector II supports the M2000 mechanism.


SEL
POWER ON
MECHA SELECT
RVS, FF
SEL
MODE SELECT
RVS, FF
SEL
From any status
Press RVS and FF for
2 sec. simultaneously
Main power is
turned off
MANUAL TEST
STEP TEST
AUTO TEST
SEL
RVS
FF
SEL
RVS
FF
SEL
RVS, FF

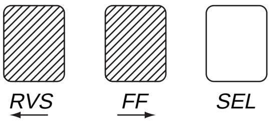
2. Mode Selector II Power On

Turn on the main power of the Mode Selector II as follows.
Press the SEL button.



3. Mode Selector II Power Off

Turn off the main power of the Mode Selector II as follows.
Press the RVS and FF buttons at the same time for 2 seconds or longer while the power is on.



4. Mecha Select

When the main power is turned on, the MECHA SELECT display appears on the LCD screen. Select the desired mechanism name using the RVS and FF buttons. Selection is complete when the SEL button is pressed. (Fig. A shows the B mechanism.)

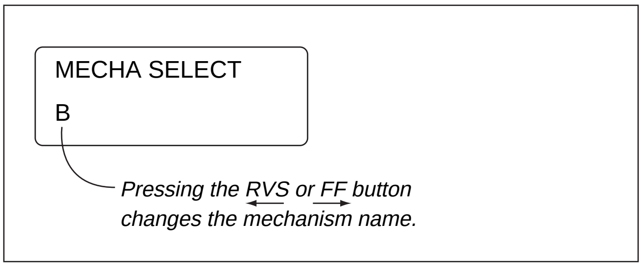

MECHA SELECT
B
Pressing the RVS or FF button changes the mechanism name.

Fig. a

5. Test Type Select

Using the RVS and FF buttons, select a desired test type from the three types of “MANUAL”, “STEP” and “AUTO”. Selection is complete when the SEL button is pressed.

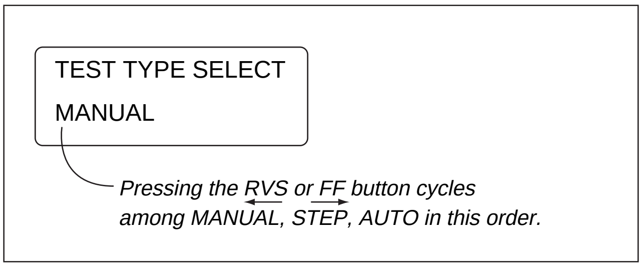

TEST TYPE SELECT
MANUAL
Pressing the RVS or FF button cycles among MANUAL, STEP, AUTO in this order.

Fig. b

6. Manual Test

In this test, the motor of the mechanism deck is turned on only during the period while the RVS or FF button is pressed manually.

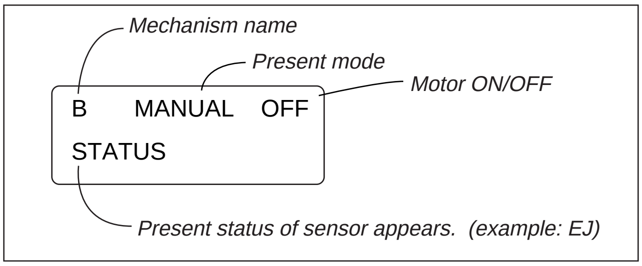

Mechanism name
Present mode
Motor ON/OFF
B
MANUAL
OFF
STATUS
Present status of sensor appears. (example: EJ)

Fig. c

7. Step Test

In this test, the direction of motor movement is determined by the RVS and FF buttons. The motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information.

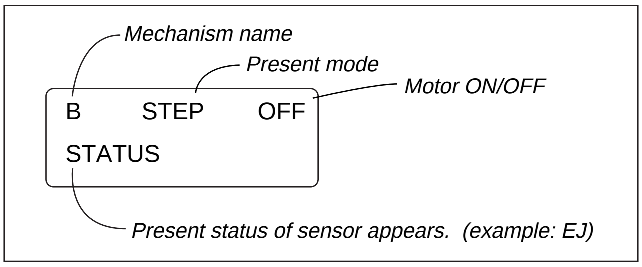

Mechanism name
Present mode
Motor ON/OFF
B
STEP
OFF
STATUS
Present status of sensor appears. (example: EJ)

Fig. d

8. Auto Test

In this test, the mechanism deck is tested as to whether it performs a series of movements correctly in accordance with the operation sequence that is memorized earlier for each type of deck, by checking the output signals from sensors with the stored memory. Turning on the RVS or FF button performs the same operation.

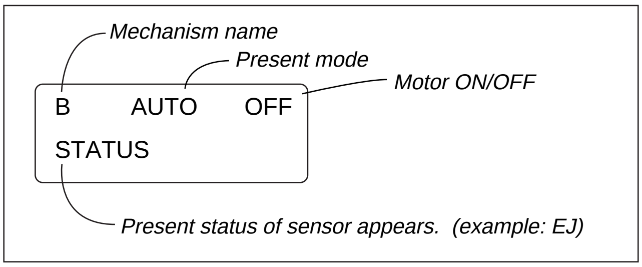

Mechanism name
Present mode
Motor ON/OFF
B
AUTO
OFF
STATUS
Present status of sensor appears. (example: EJ)

Fig. e

1-2-3. Mechanism Status (Position) Transition Table Using Mode Selector II

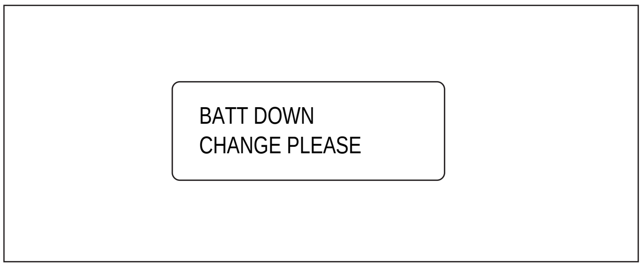
After selecting a mechanism deck, select either the MANUAL or STEP test (not AUTO) using the Mode Selector II. The desired mechanism status (position) can be specified by pressing the $\underset{\longleftarrow}{\text{RVS}}$ or $\underset{\longrightarrow}{\text{FF}}$ button. (The selected status appears on STATUS.)
EJ↔USE↔LOAD↔STOP↔TURN↔RP↔REW

MD name Code				M2000 Mechanism
A	B	C		
1	0	0	1	EJ
1	1	0	2	USE
0	1	0	3	LOAD
0	1	1	4	STOP
0	0	1	5	TURN
0	0	0	6	RP
1	0	1	7	REW

[0 is common and short.
1 is common and open.]

1-2-4. Battery Alarm Indication

When the level of the battery used to supply power to this system decreases, this display appears asynchronously. When this happens, all operations are disabled and the battery must be replaced.



BATT DOWN
CHANGE PLEASE

Fig. f

2. Periodic Inspection and Maintenance

- Be sure to perform the following maintenance and inspection so that the machine delivers its full performance and functions, and to protect the machine and tape. Also, perform the following maintenance items after completing the repair work, regardless of the number of hours the machine has been operated by the user.

2-1. Rotary Drum Cleaning

1) Press a wiping cloth (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly against the rotary drum. Rotate the upper drum with a super-fine applicator slowly in the counter-clockwise direction to clean the rotary drum.

Caution: Never rotate the rotary drum by turning on the main power of the motor or rotate it in the clockwise direction. Never move the cloth vertically against the head tip, as this will surely damage the video head; the video head must not be cleaned by any other different methods.

2-2. Tape Path System Cleaning

(Refer to Fig. 2-1.)

1) Set the EJECT state. Clean the tape running path (TG1, 2, 3, 4, 5, 6 and 7, pinch roller and capstan shaft) and lower drum with a super-fine applicator (Ref. No. J-3) moistened with cleaning fluid.

Note 1: Be careful not to allow oil or grease of the various link mechanisms to get on the super-fine applicator (Ref. No. J-3).

Note 2: Once the super-fine applicator has been moistened with alcohol, do not use it to clean other mechanical parts such as the tape guide. However, the pinch roller is cleaned with alcohol.

Note 3: When cleaning the capstan shaft, be carefull not to move the oil seal. If the oil seal is moved, oil will leak.

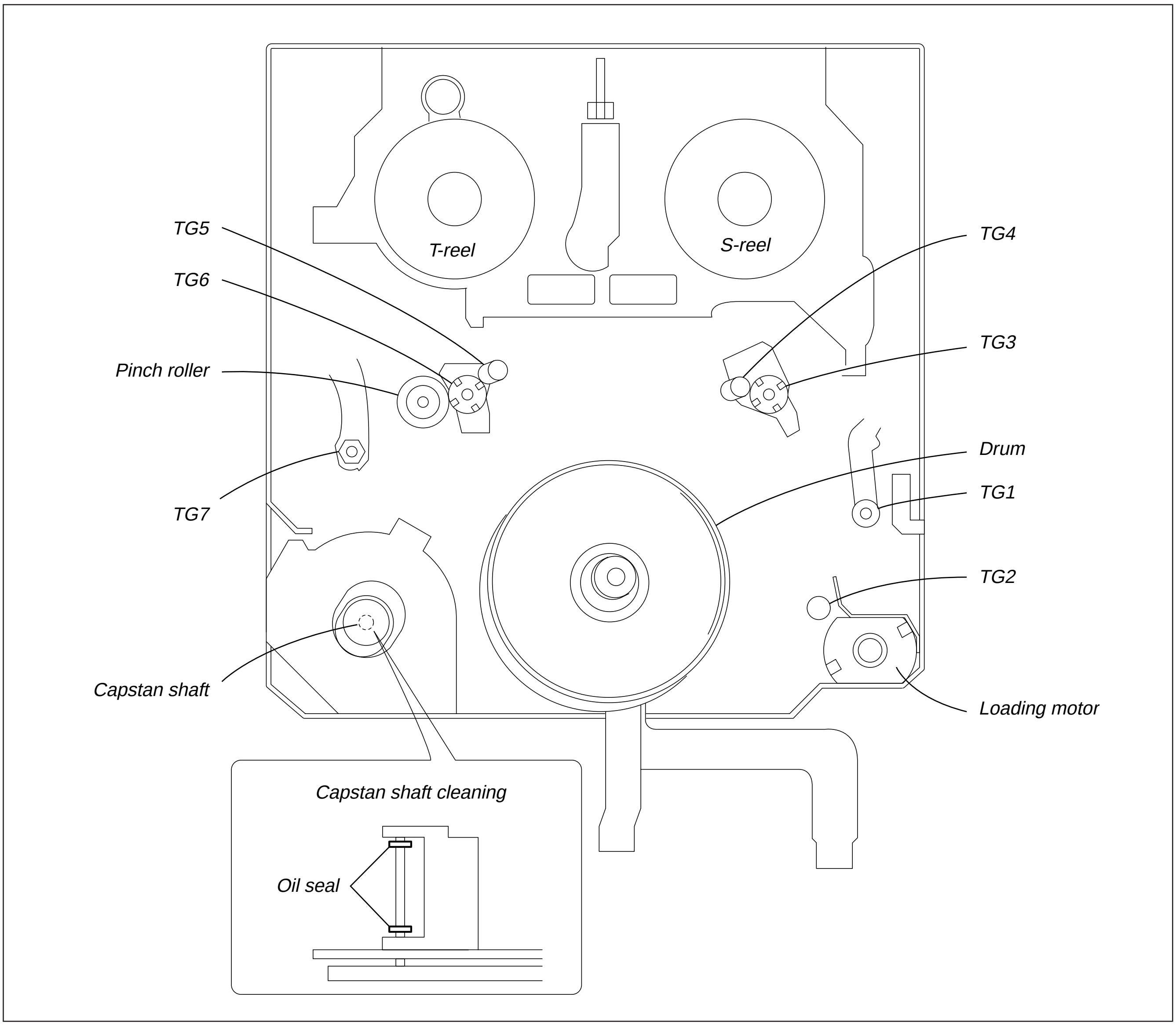


Fig. 2-1

2-3. Periodic Inspection List

Maintenance and inspection item		Operating hours (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Tape running surface cleaning	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
	Rotary drum cleaning and degaussing	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
Drive mechanism	Timing belt	—	☆	—	☆	—	☆	—	☆	—	☆	
	Capstan shaft	—	☆	—	☆	—	☆	—	☆	—	☆	Never attach oil to the tape running path during periodic inspection.
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back-tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD/RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○: Cleaning, ☆: Check

Note: When the machine is overhauled, replace the parts referring to the above list.

2-4. Appling Oil and Grease

When replacing or assembling the parts, use oil and grease while referring to the following.

On Oil

- Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)
  Oil: Part No. 7-661-018-18
  (Mitsubishi diamond oil hydro fluid NT-68)
- The oil used for bearings must not contain any dust or other materials, otherwise excessive abrasion and seizure of the bearing could occur.
- A drop of oil means the amount of oil as shown in the illustration in the right, which is the amount that is attracted to the top of a rod of 2 mm diameter.

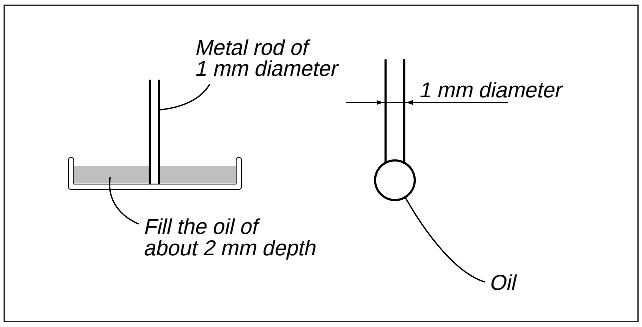


Fig. 2-2

On Grease

- Be sure to use the specified grease only. (If oil of different viscosity is used, it can cause various troubles.)
  Floil grease: Part No. 7-662-001-39
- Be sure to use grease into which dust is not mixed.
- The amount of grease is 1 to 1.5 mm diameter in length.

3. Before Replacement, Check or Adjustment

3-1. Phase Adjustment

The phase adjustment of this mechanism block has been adjusted by using the in-phase markings shown in the following figure.
When replacing or assembling the parts, check the phase.

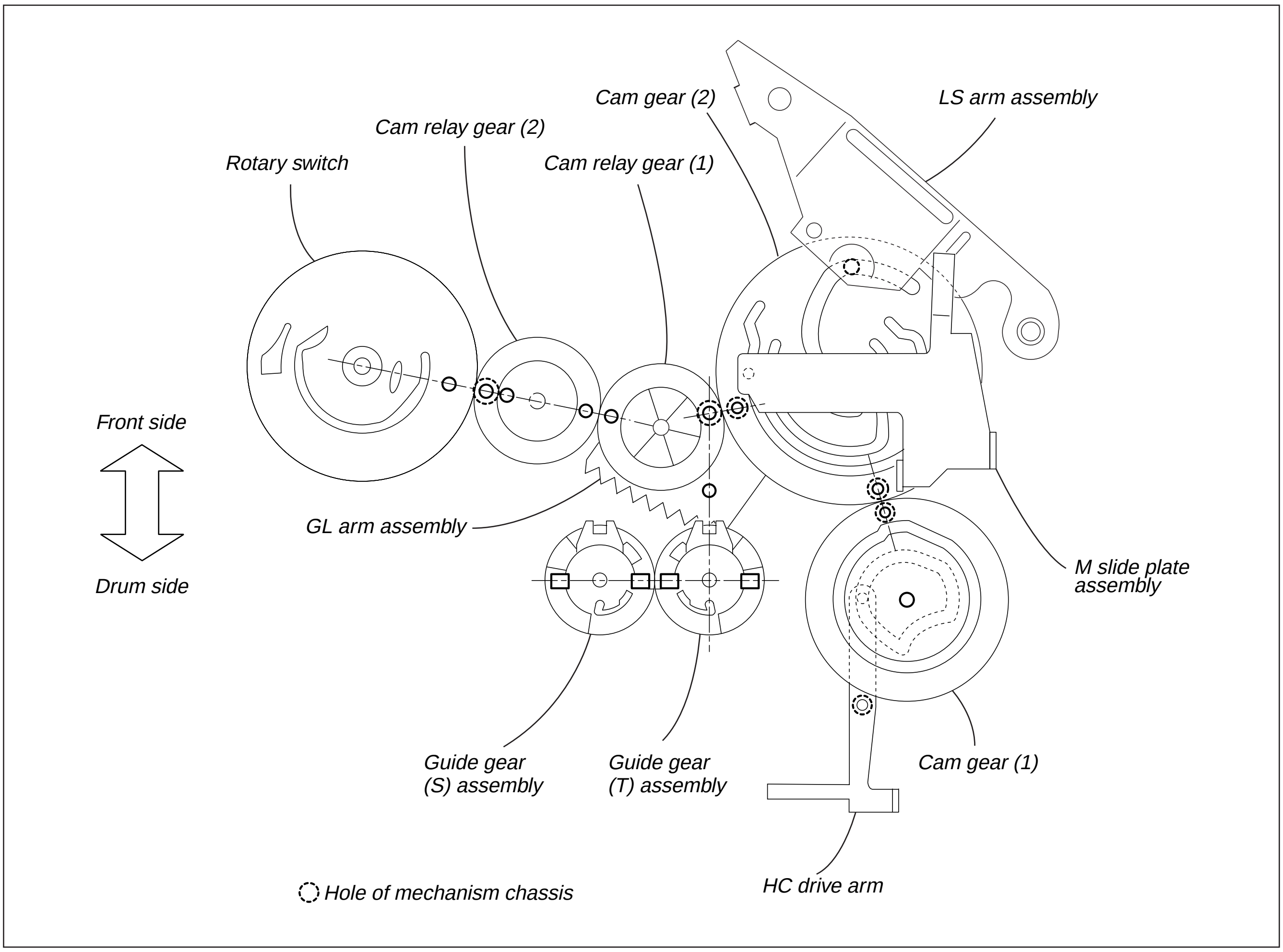

Cam gear (2)
LS arm assembly
Cam relay gear (2)
Rotary switch
Cam relay gear (1)
Front side
Drum side
GL arm assembly
M slide plate assembly
Guide gear (S) assembly
Guide gear (T) assembly
Cam gear (1)
HC drive arm
Hole of mechanism chassis

Fig. 3-1.

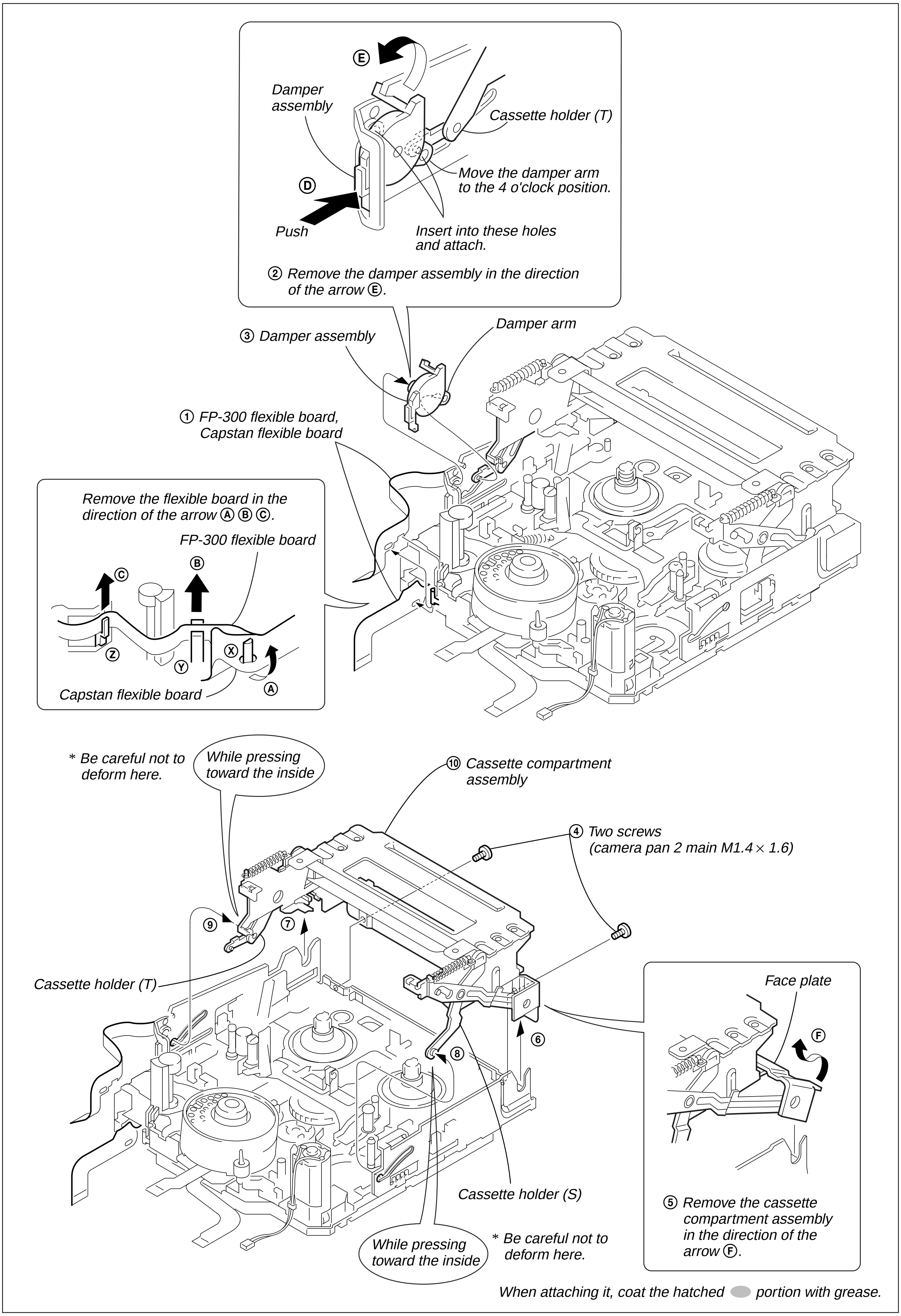
3-2. Cassette compartment assembly

1. Removal procedure

1) Set the EJ mode to move up the cassette compartment assembly ⑩.
2) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders Ⓧ, Ⓨ and Ⓩ in the directions of the arrows Ⓐ, Ⓑ and Ⓒ.
3) Push the damper assembly ③ in the directions of the arrows Ⓓ and Ⓔ and remove it from the notch of the LS chassis block assembly.
4) Remove the two screws (camera pan2 main M1.4 × 1.6) ④.
5) With the cassette compartment assembly ⑩ half opened, move the face plate in the direction of the arrow Ⓕ and remove it from the grooves ⑥ and ⑦ on the LS chassis block assembly.
6) Remove the cassette holder (S) ⑧ and cassette holder (T) ⑨ of the cassette compartment assembly ⑩ from the groove on the LS chassis block assembly.

2. Attachment procedure

1) Set the USE mode.
2) Insert the cassette holder (S) ⑧ of the cassette compartment assembly ⑩ and cassette holder (T) ⑨ into the grooves on both sides of the LS chassis block assembly.
3) While moving down the cassette compartment assembly ⑩, lift up the face plate in the direction of the arrow Ⓕ and keep this status. Then, insert the face plate in the grooves ⑥ and ⑦ on the LS chassis block assembly.
4) Tighten the two screws (camera pan2 main M1.4×1.6) ④.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
5) Move the damper arm of the damper assembly ③ to the 4 o'clock position and insert the damper assembly into the hole on the LS chassis block assembly and the dowel of the cassette holder (T) ⑨.
6) Align the damper assembly ③ with the notch of the LS chassis block assembly and rotate the damper assembly ③ in the opposite direction to the arrow Ⓔ to fix it.


Ⓔ
Damper assembly
Cassette holder (T)
Move the damper arm to the 4 o'clock position.
Ⓓ
Push
Insert into these holes and attach.
③ Damper assembly
Damper arm
① FP-300 flexible board, Capstan flexible board
FP-300 flexible board
Ⓒ
Ⓑ
Ⓩ
Ⓧ
Ⓨ
Ⓐ
Capstan flexible board
While pressing toward the inside
⑩ Cassette compartment assembly
④ Two screws (camera pan 2 main M1.4 × 1.6)
⑨
⑦
Cassette holder (T)
⑥
⑧
Face plate
Ⓕ
Cassette holder (S)
While pressing toward the inside

② Remove the damper assembly in the direction of the arrow Ⓔ.

Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.

* Be careful not to deform here.

* Be careful not to deform here.

⑤ Remove the cassette compartment assembly in the direction of the arrow Ⓕ.

When attaching it, coat the hatched ● portion with grease.

Fig. 3-2.

4. Check, Adjustment and Replacement

Note: For removal procedure of the cabinets, printed wiring boards and other parts, refer to "DISASSEMBLY" of the Service Manual of the respective models.

4-1. Drum Assembly

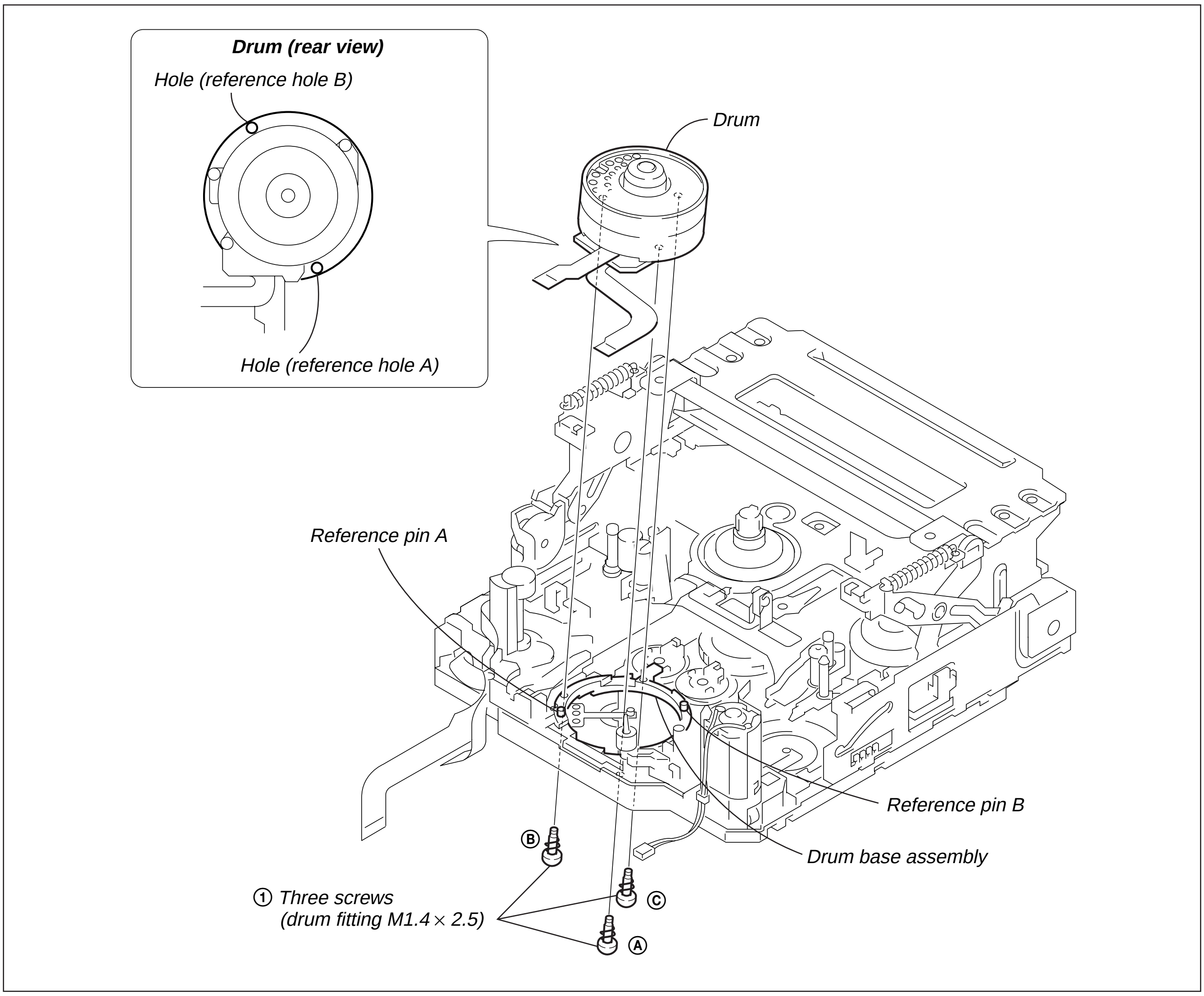
1. Removal procedure

1) Remove the three screws (drum fitting M1.4 × 2.5) ① fixing the drum and remove the drum.

2. Attachment procedure

1) Align the two reference holes A and B on the rear of the drum with the reference pins A and B of the drum base assembly.
2) Attach the drum with the three screws (drum fitting M1.4 × 2.5) ① in the order of Ⓐ, Ⓑ and Ⓒ.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
3) Clean the drum while referring to 2-1.
4) Adjust the tape path. (Refer to "4. Tape Path Adjustment".)

Note: Do not touch the outside circumference.



Drum (rear view)
Hole (reference hole B)
Hole (reference hole A)
Drum
Reference pin A
Reference pin B
Drum base assembly
Ⓑ
Ⓒ
Ⓐ
① Three screws
(drum fitting M1.4 × 2.5)

Fig. 4-1.

4-2. HCL Arm Assembly, Loading Motor Assembly

1. Removal procedure

1) Hook the HC arm spring in the direction of the arrow Ⓑ.
2) Remove the HCL arm assembly ② from the loading motor assembly ④.
3) Remove the screw (M1.4 × 2.5) ③.
4) Remove the three claws of the loading motor assembly ④ from the mechanism chassis assembly in the direction of the arrow Ⓐ.

2. Attachment procedure

1) Coat the worm shaft and gear of the loading motor assembly ④ with grease.
2) Insert the three claws of the loading motor assembly ④ into the groove on the mechanism chassis assembly.
3) Attach the screw (M1.4 × 2.5) ③.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Check the position of the HCL arm assembly ② and the HC drive arm. Then attach the HCL arm assembly ② to the loading motor assembly ④.
5) Hook the HC arm spring ① on the notch of the loading motor assembly ④.
6) Clean the drum assembly. (Refer to section 2-1.)

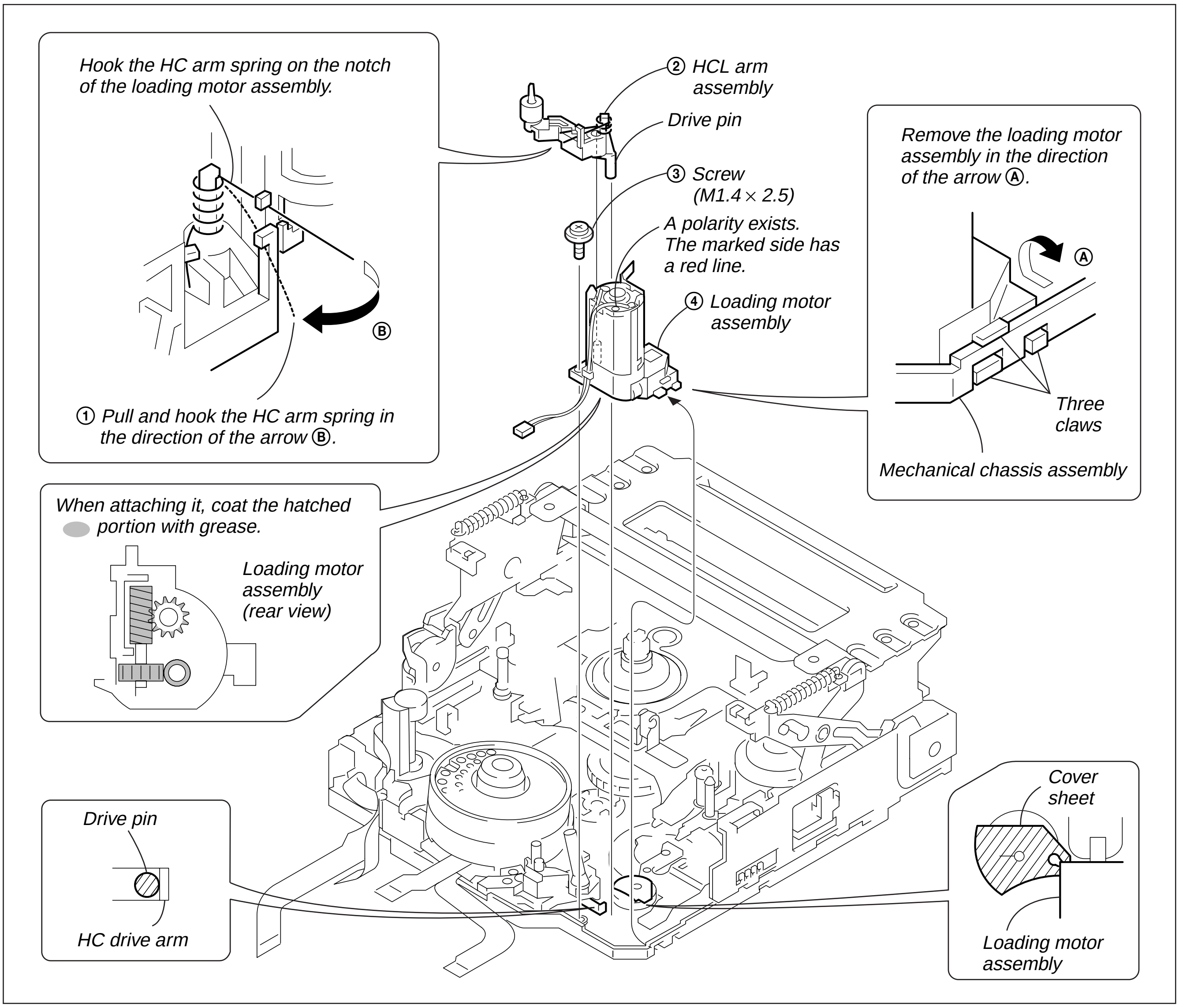

Hook the HC arm spring on the notch of the loading motor assembly.
Ⓑ
① Pull and hook the HC arm spring in the direction of the arrow Ⓑ.
② HCL arm assembly
Drive pin
③ Screw (M1.4 × 2.5)
A polarity exists. The marked side has a red line.
④ Loading motor assembly
Remove the loading motor assembly in the direction of the arrow Ⓐ.
Ⓐ
Three claws
Mechanical chassis assembly
When attaching it, coat the hatched portion with grease.
Loading motor assembly (rear view)
Drive pin
HC drive arm
Cover sheet
Loading motor assembly

Fig. 4-2.

4-3. Drum Base Assembly, Drum Earth

1. Removal procedure

1) Remove the capstan flexible board and flexible wiring board (FP-300) from the holders Ⓧ, Ⓨ and Ⓩ in the direction of the arrow.
2) Remove the drum assembly. (Refer to section 4-1.)
3) Remove the screw (M1.4 × 2.5) ②.
4) Remove the claw Ⓓ of the guide rail T2 ③ from the hole Ⓔ of the drum base assembly in the direction of the arrow Ⓕ.
5) Remove the three screws (M1.4 × 2.5) ④.
6) Remove the drum base assembly ⑤ in the direction of the arrow.
7) Remove the screw (screw assy PW M1.7 × 2.6) ⑥.
8) Remove the drum earth ⑦ and earth spacer ⑧.

2. Attachment procedure

1) Attach the ground spacer ⑧ and drum ground ⑦ with the screw (screw assy PW M1.7 × 2.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
2) Align the drum base assembly ⑤ with the reference pin and tighten the three screws (M1.4 × 2.5) ④ in the order of Ⓖ, Ⓗ and Ⓘ.
3) Insert the claw Ⓓ of the guide rail T2③ into the hole Ⓔ of the drum base assembly ⑤ and tighten the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 kgf•cm)
4) Remove the drum assembly. (Refer to 4-1.)
5) Attach the flexible wiring board (FP-300) ① and capstan flexible board to the drum base assembly.
6) Clean the tape running path. (Refer to 2-2.)

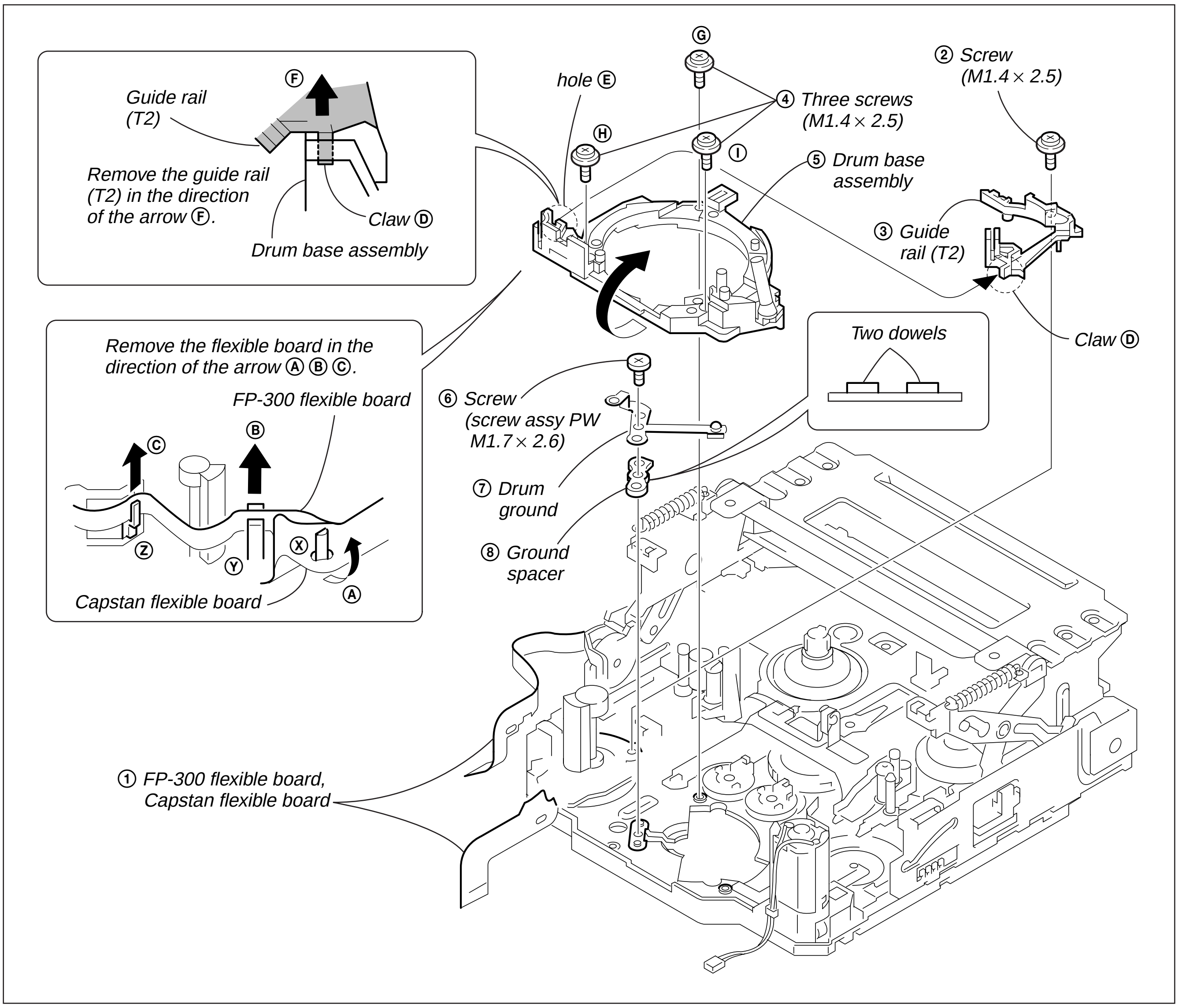

Guide rail
(T2)
Ⓕ
Remove the guide rail (T2) in the direction of the arrow Ⓕ.
Claw Ⓓ
Drum base assembly
Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.
FP-300 flexible board
Ⓒ
Ⓑ
Ⓩ
Ⓨ
Ⓧ
Ⓐ
Capstan flexible board
Ⓖ
hole Ⓔ
Ⓗ
Ⓘ
④ Three screws
(M1.4 × 2.5)
② Screw
(M1.4 × 2.5)
⑤ Drum base
assembly
③ Guide
rail (T2)
Claw Ⓓ
Two dowels
⑥ Screw
(screw assy PW
M1.7 × 2.6)
⑦ Drum
ground
⑧ Ground
spacer
① FP-300 flexible board,
Capstan flexible board

Fig. 4-3.

4-4. Guide Rail T2, Capstan Motor

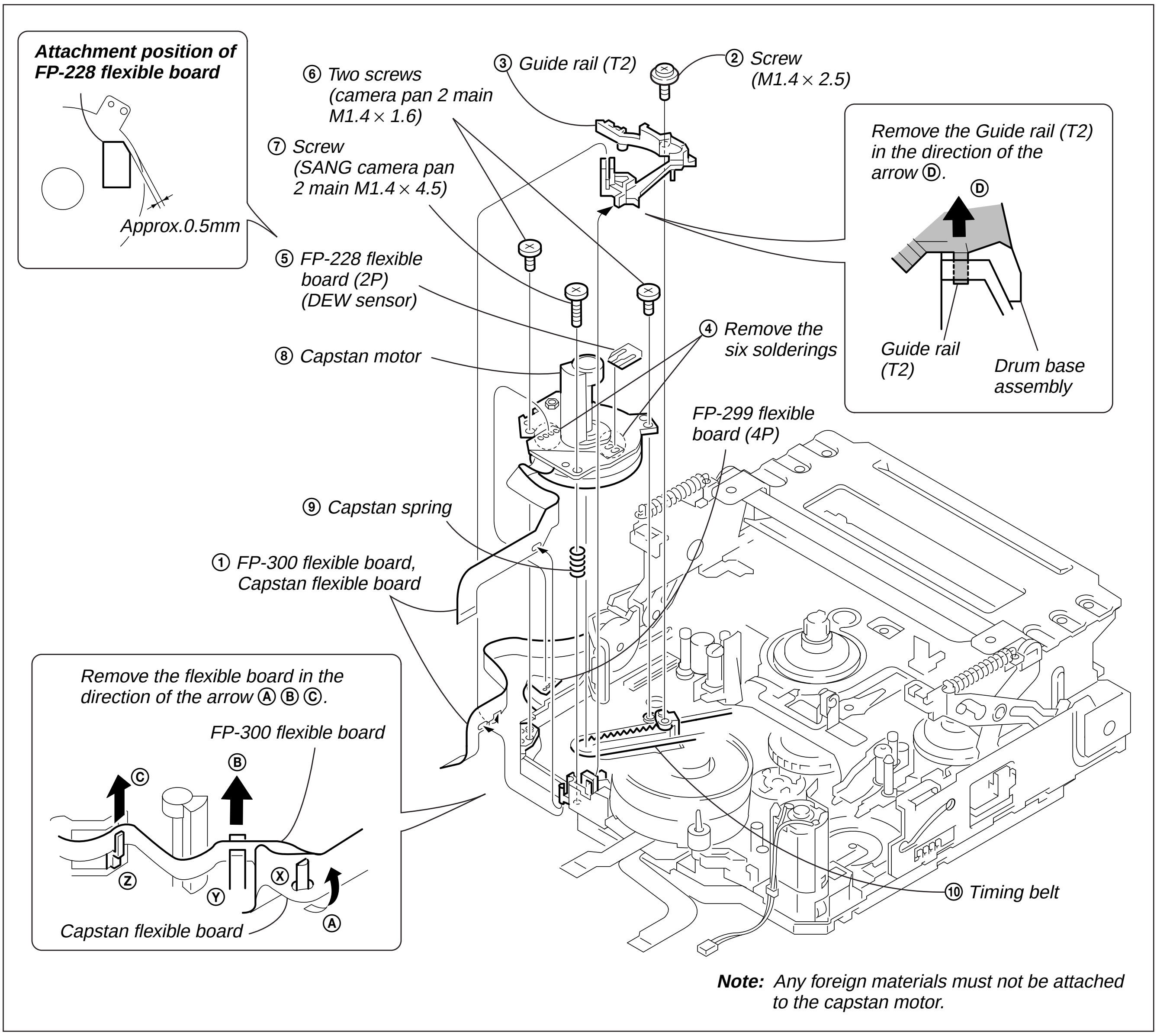
1. Removal procedure

1) Remove the capstan flexible board and flexible wiring board (FP-300) ① from the holders Ⓧ, Ⓨ and Ⓩ in the directions of the arrows Ⓐ, Ⓑ and Ⓒ.
2) Remove the screw (M1.4 × 2.5) ②.
3) Remove the claw of the guide rail T2 ③ from the hole on the drum base assembly in the direction of the arrow Ⓓ.
4) Remove the six solderings ④.
5) Remove the FP-228 flexible wiring board (2P) (DEW sensor) ⑤.
6) Remove the two screws (camera pan2 main M1.4 × 1.6) ⑥ and the screw (SANG camera pan2 main M1.4 × 4.5) ⑦.
7) Remove the capstan motor ⑧.
8) Remove the capstan spring ⑨ (be careful not to drop the capstan spring) and timing belt ⑩.

2. Attachment procedure

1) Hook the timing belt ⑩ on the gear of the capstan motor ⑧, attach the capstan motor while aligning it with the reference boss of the mechanism chassis assembly.
2) Attach the screw (SANG camera pan2 M1.4 × 4.5) ⑦ and capstan spring ⑨. (temporally attachment)
3) Attach the two screws (camera pan2 M1.4 × 1.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the six solderings ④ to the FP-228 flexible wiring board ⑤ (2P) (DEW sensor) and the FP-299 flexible wiring board (4P).
5) Insert the guide rail T2 ③ into the hole on the drum base assembly and tighten the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
6) Attach the capstan flexible board and the flexible wiring board (FP-300) ① to the holders Ⓧ, Ⓨ and Ⓩ.
7) Adjust the height of the capstan motor using the thickness gauge (Ref. No. J-16). (Refer to 5-3.)

Note: Be careful not to touch the center of the capstan motor ⑩ shaft and the FP-228 flexible wiring board (DEW sensor) with soldering iron or other tool.


Attachment position of FP-228 flexible board
Approx.0.5mm
⑥ Two screws (camera pan 2 main M1.4 × 1.6)
⑦ Screw (SANG camera pan 2 main M1.4 × 4.5)
⑤ FP-228 flexible board (2P) (DEW sensor)
⑧ Capstan motor
③ Guide rail (T2)
② Screw (M1.4 × 2.5)
Remove the Guide rail (T2) in the direction of the arrow Ⓓ.
Ⓓ
Guide rail (T2)
Drum base assembly
④ Remove the six solderings
FP-299 flexible board (4P)
⑨ Capstan spring
① FP-300 flexible board, Capstan flexible board
Remove the flexible board in the direction of the arrow Ⓐ Ⓑ Ⓒ.
FP-300 flexible board
Ⓒ
Ⓑ
Ⓩ
Ⓨ
Ⓧ
Ⓐ
Capstan flexible board
⑩ Timing belt

Note: Any foreign materials must not be attached to the capstan motor.

Fig. 4-4.

4-5. Blind Plate, Lock Guide

1. Removal procedure

1) Remove the diode D001 (tape LED) ① from the notch of the plate ④.
2) Remove the flexible wiring board ② (FP-301) from T-shaped portion of the blind plate ④ in the direction of the arrow Ⓐ.
3) Remove the screw (camera pan2 main M1.4 × 1.6) ③.
4) Release the hook on the notches Ⓖ, Ⓓ, Ⓔ and Ⓕ of the blind plate ④ in the direction of the arrow Ⓑ.
5) Remove the reel release lever ⑤ in the direction of the arrow Ⓒ.

2. Attachment procedure

1) Attach the reel release lever ⑤ to the blind plate ④.
2) Hang the notches Ⓖ, Ⓓ, Ⓔ and Ⓕ of the blind plate ④ on the hook.
3) Attach the screw (camera pan2 main M1.4 × 1.6) ③.
Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the flexible wiring board (FP-301) ② to the T-shaped portion of the blind plate ④.
5) Attach the diode (tape LED) ① to the notch of the blind plate ④.

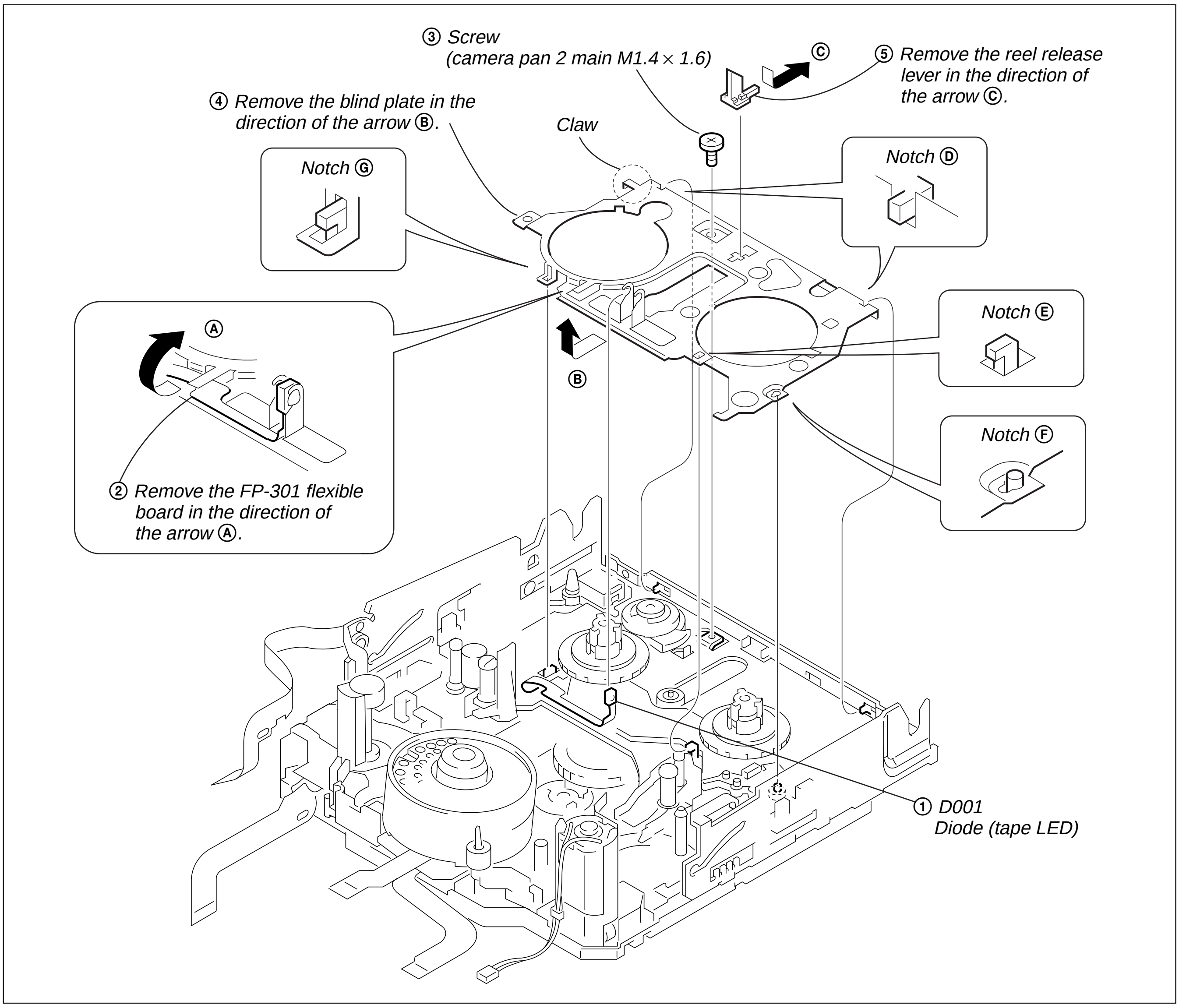

③ Screw
(camera pan 2 main M1.4 × 1.6)
Ⓒ
⑤ Remove the reel release lever in the direction of the arrow Ⓒ.
④ Remove the blind plate in the direction of the arrow Ⓑ.
Claw
Notch Ⓖ
Notch Ⓓ
Notch Ⓔ
Notch Ⓕ
Ⓐ
Ⓑ
② Remove the FP-301 flexible board in the direction of the arrow Ⓐ.
① D001
Diode (tape LED)

Fig. 4-5.

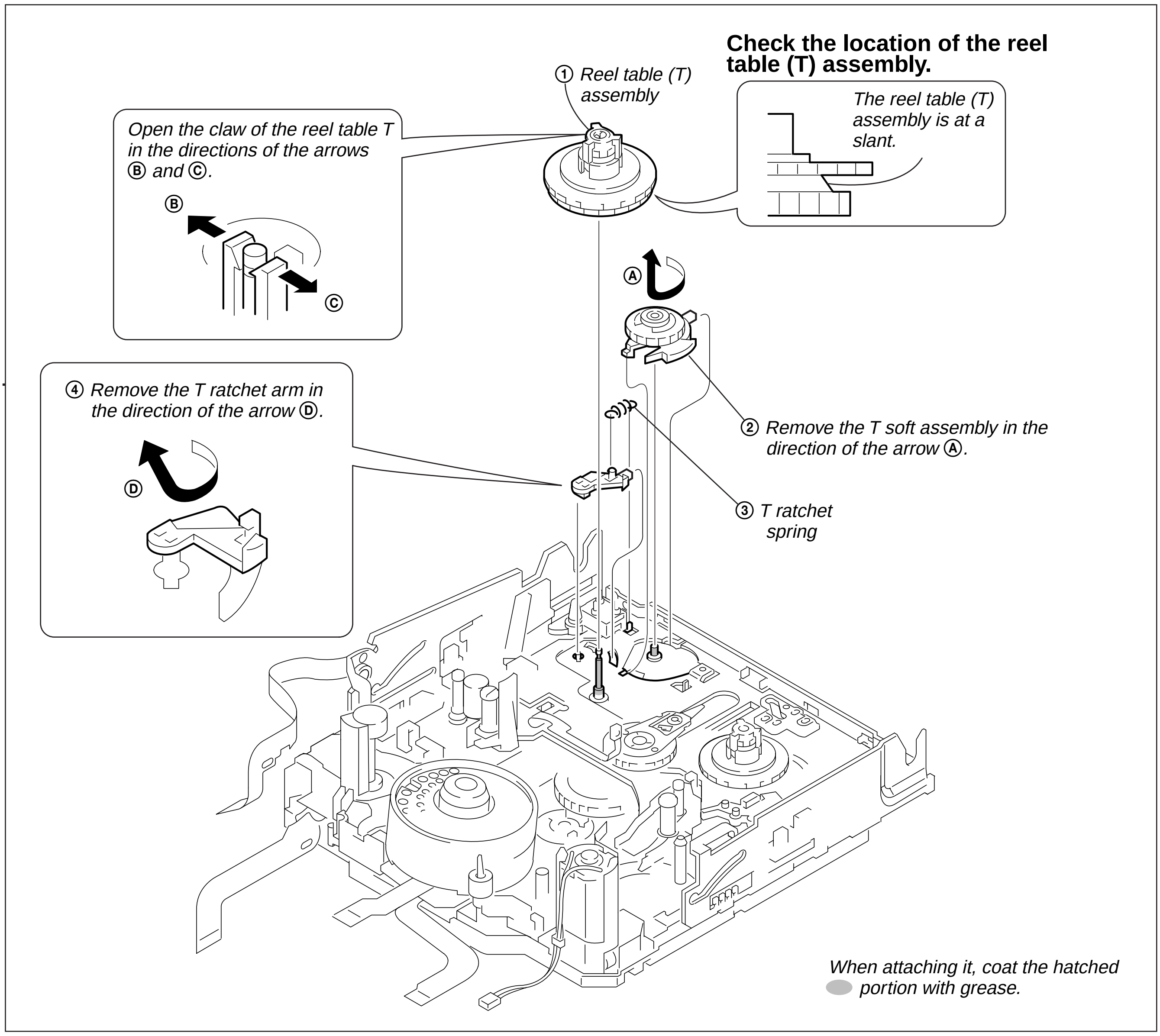
4-6. Reel Table (T) Assembly, T Soft Assembly

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Open the claw of the reel table T assembly ① in the directions of the arrows Ⓑ and Ⓒ and remove the reel table T assembly.
3) Remove the T soft assembly ② in the direction of the arrow Ⓐ.
4) Remove the T ratchet spring ③.
5) Remove the T ratchet arm ④ in the direction of the arrow Ⓓ.

2. Attachment procedure

1) Insert the T ratchet arm ④ into the groove on the LS chassis block assembly to attach it.
2) Attach the T ratchet spring ③ to the notch of the T ratchet arm ④ and LS chassis block assembly.
3) Insert the T soft assembly into the groove on the LS chassis block assembly.
4) Check the location of the reel table T assembly and attach the LS chassis block assembly to the shaft.
5) Attach the blind plate. (Refer to 4-5.)



Check the location of the reel table (T) assembly.

The reel table (T) assembly is at a slant.

Open the claw of the reel table T in the directions of the arrows Ⓑ and Ⓒ.

④ Remove the T ratchet arm in the direction of the arrow Ⓓ.

② Remove the T soft assembly in the direction of the arrow Ⓐ.

When attaching it, coat the hatched ● portion with grease.

Fig. 4-6.

4-7. S Ratchet RE Plate, Cassette Guide S

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Remove the RE return plate spring ①.
3) Remove the S ratchet spring ②.
4) Remove the S ratchet arm ③ in the direction of the arrow Ⓐ.
   Note: Do not reuse the S ratchet arm.
5) Remove the S ratchet RE plate.
6) Remove the screw (camera tapping M1.4 × 2)⑤.
7) Remove the cassette guide S ⑥ in the direction of the arrow Ⓑ.

2. Attachment procedure

1) Attach the cassette guide S ⑥ to the notch of the LS chassis block assembly with the screw (camera tapping M1.4 × 2).
2) Attach the S ratchet RE plate ④ to the shaft of the LS chassis block assembly.
3) Attach the S ratchet arm ③ to the shaft of the LS chassis block assembly. At this time, the dowel of the S ratchet RE plate ④ must be inserted into the U-shaped notch of the S ratchet arm ③.
4) Hook the S ratchet spring ② on the notch of the S ratchet arm and attach it to the notch of the LS chassis block assembly.
5) Attach the RE return plate spring ① to the notch of the LS chassis block assembly.
6) Attach the blind plate. (Refer to 4-5.)

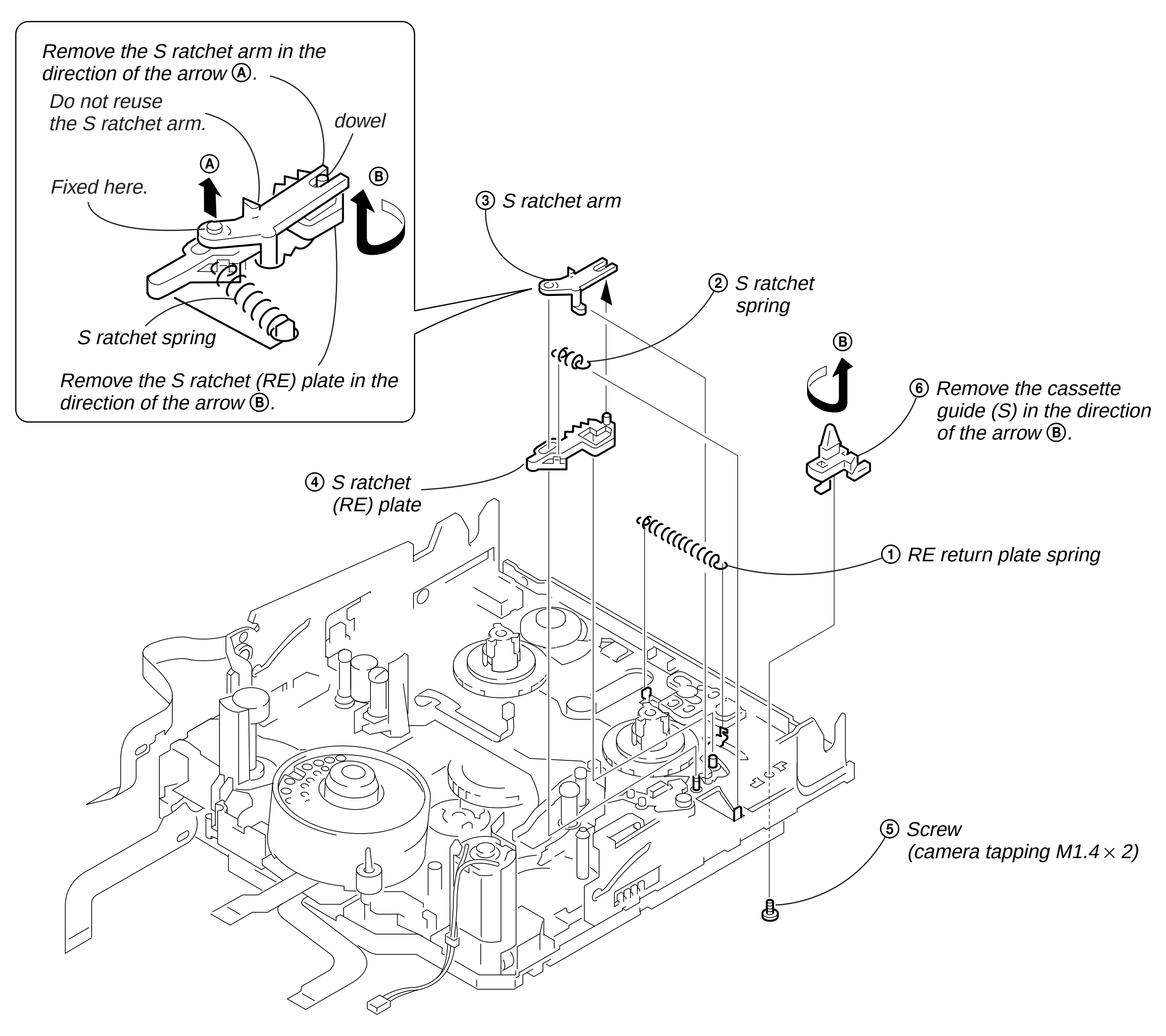

Remove the S ratchet arm in the direction of the arrow Ⓐ.
Do not reuse the S ratchet arm.
dowel
Ⓐ
Ⓑ
Fixed here.
S ratchet spring
Remove the S ratchet (RE) plate in the direction of the arrow Ⓑ.
③ S ratchet arm
② S ratchet spring
Ⓑ
⑥ Remove the cassette guide (S) in the direction of the arrow Ⓑ.
④ S ratchet (RE) plate
① RE return plate spring
⑤ Screw (camera tapping M1.4 × 2)

Fig. 4-7.

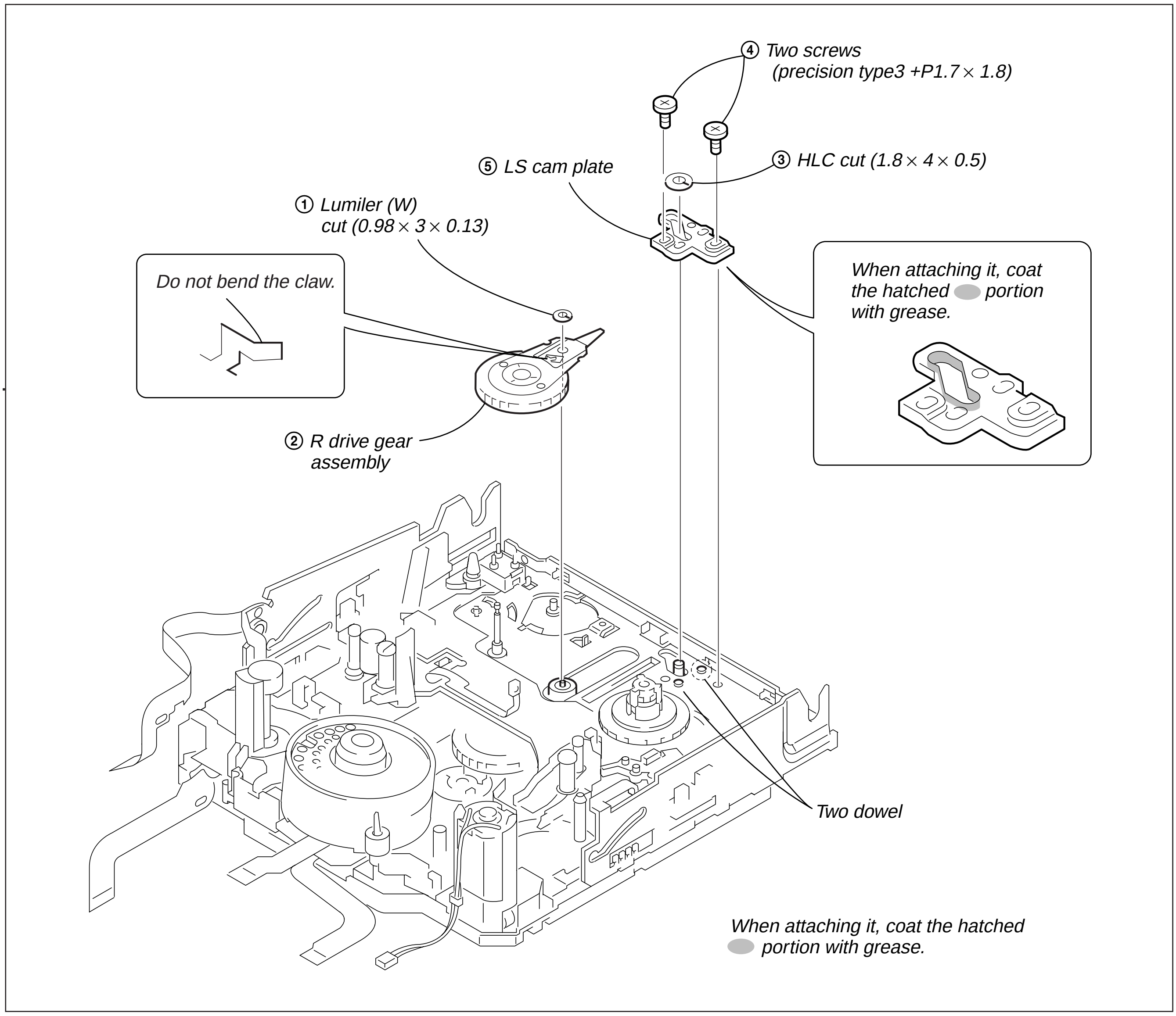
4-8. R Drive Gear Assembly, LS Cam Plate

1. Removal procedure

1) Remove the blind plate. (Refer to 4-5.)
2) Remove the lumiler cut washer (0.98 × 3 × 0.13) ①.
3) Remove the R drive gear assembly ②.
4) Remove the HLC cut (1.8 × 4 × 0.5) ③ and the two screws (precision type3 +P1.7 × 1.8) ④.
5) Remove the LS cam plate ⑤.

2. Attachment procedure

1) Attach the R drive gear assembly ② with the lumiler cut washer (0.98 × 3 × 0.13) ①.
2) Align the LS cam plate ⑤ with the two dowels of the LS chassis block assembly, temporarily fix the LS cam plate ⑤ with the two screws (precision type3 +P1.7 × 1.8), then attach it with the HLC cut (1.8 × 4 × 0.5) ③.
3) Adjust the position of the LS cam plate. (Refer to 4-9.)


④ Two screws (precision type3 +P1.7 × 1.8)
③ HLC cut (1.8 × 4 × 0.5)
⑤ LS cam plate
① Lumiler (W) cut (0.98 × 3 × 0.13)
② R drive gear assembly
Two dowel

Do not bend the claw.

When attaching it, coat the hatched ● portion with grease.

When attaching it, coat the hatched ● portion with grease.

Fig. 4-8.

4-9. LS Cam Plate Position Adjustment

1. Adjustment Procedure

1) Perform loading of the LS chassis block assembly ① until the tip of the guide base (S) assembly reaches the drum base assembly.
2) Loosen the two screws (precision type3 +P1.7 × 1.8) ② of the LS cam plate and slide the LS chassis block assembly to the drum side so as to remove play.
3) Insert the thickness gauge 0.6 mm (Ref. No. J-16) between the LS cam plate and the LS chassis block assembly. Push the LS cam plate in the direction opposite to the drum to remove play.
4) Fix the two screws (precision type3 +P1.7 × 1.8) ②.
Tightening torque: 0.108 ± 0.01 N•m (1.1 kgf•cm)

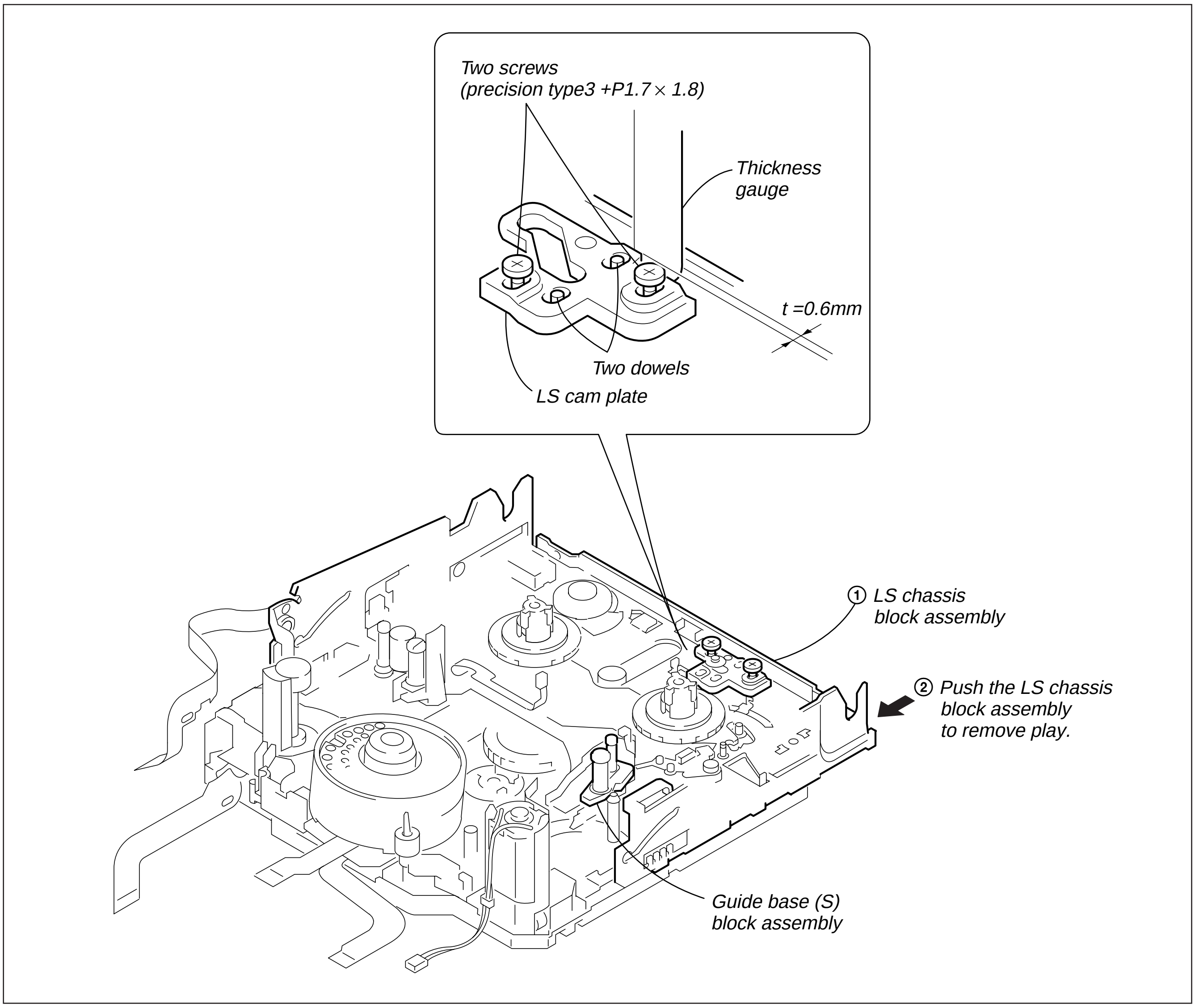

Two screws
(precision type3 +P1.7 × 1.8)
Thickness gauge
t =0.6mm
Two dowels
LS cam plate
① LS chassis block assembly
② Push the LS chassis block assembly to remove play.
Guide base (S) block assembly

Fig. 4-9.

4-10. LS Chassis Block Assembly

1. Removal procedure

1) Move the LS chassis block assembly between USE and LOAD.
2) Remove the blind plate. (Refer to 4-5.)
3) Remove the R drive gear assembly. (Refer to 4-8.)
4) Remove the HCL cut (1.8 × 4 × 0.5) ①.
5) Remove the three screws (M1.4 × 2.5) ②.
6) Remove the LS chassis block assembly ③ in the direction of the arrow Ⓐ.

2. Attachment procedure

1) Insert the LS guide roller and LS guide T2 pin of the mechanical chassis block assembly into the slot of the LS chassis block assembly ④.
2) Insert the pin of the LS arm assembly into the cam groove on the LS cam plate, face the TG7 drive pin ⑤ in the direction of the arrow Ⓑ, and insert it to the two slot of the mechanical chassis. Then, tighten the three screws (M1.4 × 2.5) ② in the order of Ⓒ, Ⓓ and Ⓔ.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
3) Attach the HCL cut (1.8 × 4 × 0.5) ① to the pin of the LS arm assembly.
4) Attach the R drive gear assembly. (Refer to 4-8.)
5) Attach the blind plate. (Refer to 4-5.)
6) Clean the tape running path. (Refer to 2-2.)

Note: Each arm must move smoothly.

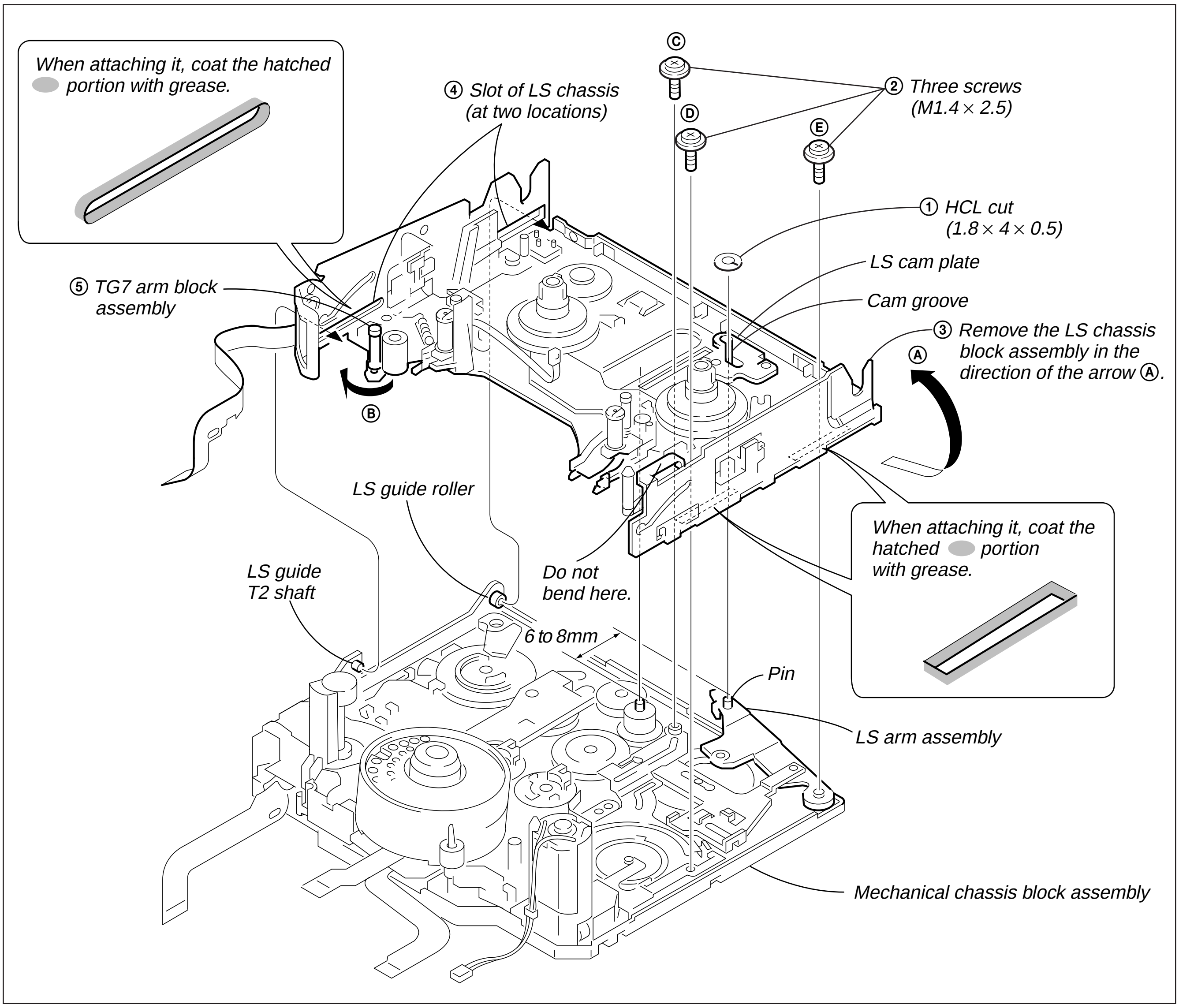

When attaching it, coat the hatched ⬤ portion with grease.
④ Slot of LS chassis (at two locations)
Ⓒ
Ⓓ
Ⓔ
② Three screws (M1.4 × 2.5)
① HCL cut (1.8 × 4 × 0.5)
LS cam plate
Cam groove
③ Remove the LS chassis block assembly in the direction of the arrow Ⓐ.
Ⓐ
⑤ TG7 arm block assembly
Ⓑ
LS guide roller
LS guide T2 shaft
Do not bend here.
6 to 8mm
When attaching it, coat the hatched ⬤ portion with grease.
Pin
LS arm assembly
Mechanical chassis block assembly

Fig. 4-10.

4-11. TG7 Arm Block Assembly, Pinch Arm Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the screw (camera pan2 M1.4 × 1.6) ①.
3) Remove the TG7 retainer ② in the direction of the arrow.
4) Remove the TG7 arm block assembly ⑥ and TG7 arm spring ⑦.
5) Remove the pinch roller arm assembly ③.
6) Remove the P lim arm roller ④ and pinch arm load spring ⑤.

2. Attachment procedure

1) Attach the P lim arm roller ④ to the pinch roller arm assembly ③.
2) Insert one end of the pinch arm load spring ⑤ into the hole on the rising metal sheet of the LS chassis block assembly, and hook the other end of the spring on the position setting protrusion of the LS-057 board.
3) Attach the pinch roller arm assembly ③ to the shaft of the LS chassis block assembly, and hook the pinch arm load spring ⑤ on the rising metal sheet of the pinch roller assembly ③.
4) Hook the TG7 arm spring ⑦ on the shaft of the LS chassis block assembly while the hook side of the spring is facing downward.
5) When attaching the TG7 arm block assembly ⑥ to the shaft of the LS chassis block assembly, hook the hook side of the TG7 arm spring ⑦ on the rising metal sheet of the LS chassis block assembly and hook the top side of the spring to the notch of the TG7 arm block assembly ⑥.
6) Attach the TG7 retainer ② with the screw (camera pan2 M1.4 × 1.6) ①.
7) Remove the LS chassis block assembly. (Refer to 4-10.)
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
8) Clean the tape running path. (Refer to 2-2.)

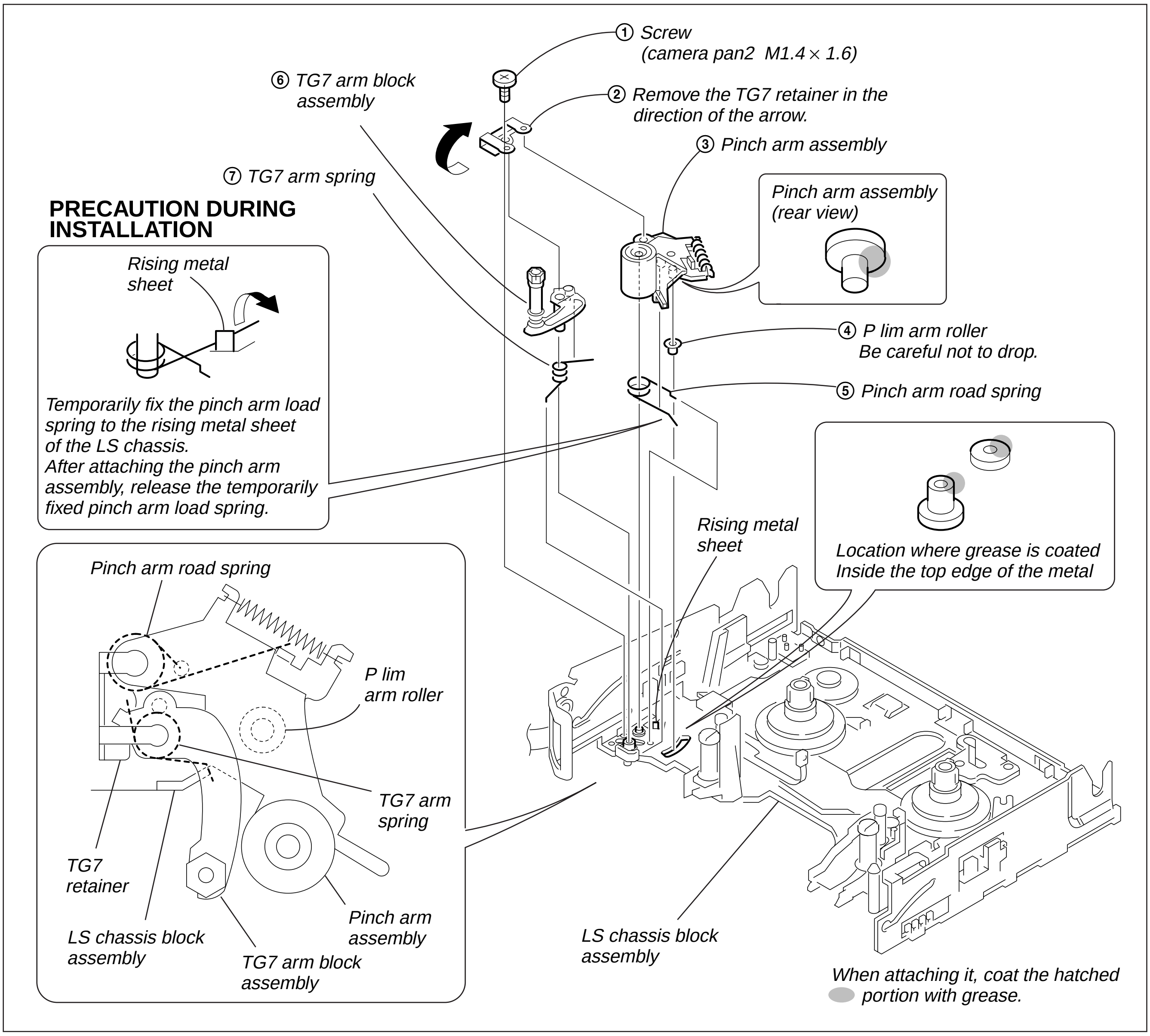

① Screw
(camera pan2 M1.4 × 1.6)
⑥ TG7 arm block assembly
② Remove the TG7 retainer in the direction of the arrow.
③ Pinch arm assembly
⑦ TG7 arm spring
Pinch arm assembly (rear view)
PRECAUTION DURING INSTALLATION
Rising metal sheet
Temporarily fix the pinch arm load spring to the rising metal sheet of the LS chassis.
After attaching the pinch arm assembly, release the temporarily fixed pinch arm load spring.
④ P lim arm roller
Be careful not to drop.
⑤ Pinch arm road spring
Location where grease is coated
Inside the top edge of the metal
Rising metal sheet
Pinch arm road spring
P lim arm roller
TG7 arm spring
TG7 retainer
LS chassis block assembly
Pinch arm assembly
TG7 arm block assembly
LS chassis block assembly
When attaching it, coat the hatched
● portion with grease.

Fig. 4-11.

4-12. Guide Base (T) Block Assembly, Guide Base (S) Block Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Align the claw of the guide base (T) block assembly ① with the notch of the guide arm T and remove the guide base (T) block assembly.
3) Remove the screw (M1.4 × 2.5) ② and remove the guide rail (T) ③.
4) Align the claw of the guide base (S) block assembly ④ with the notch of the guide arm S and remove the guide base (S) block assembly.
5) Remove the screw (M1.4 × 2.5) ⑤ and remove the guide rail (S) ⑥.

2. Attachment procedure

1) Align the holes on the guide rail (S) ⑥ with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (S) ⑥ with the screw (M1.4 × 2.5) ⑤.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
2) Attach the guide base (S) block assembly ④ while aligning it with the groove on the guide arm S.
3) Align the holes on the guide rail (T) ③ with the protrusions (at two locations) of the LS chassis block assembly and attach the guide rail (T) ③ with the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the guide base (T) block assembly ① while aligning it with the groove on the guide arm T.
   Note: Do not forget to hook the plate spring.
5) Withdraw the joint portion of the guide arm S and the guide arm T in the directions of the arrows Ⓐ and Ⓑ.
6) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
7) Clean the tape running path. (Refer to 2-2.)

Note: Be careful of the shape of the guide base T/S block assembly.
Guide base (T) block assembly = Guide base (small)
Guide base (S) block assembly = Guide base (large)

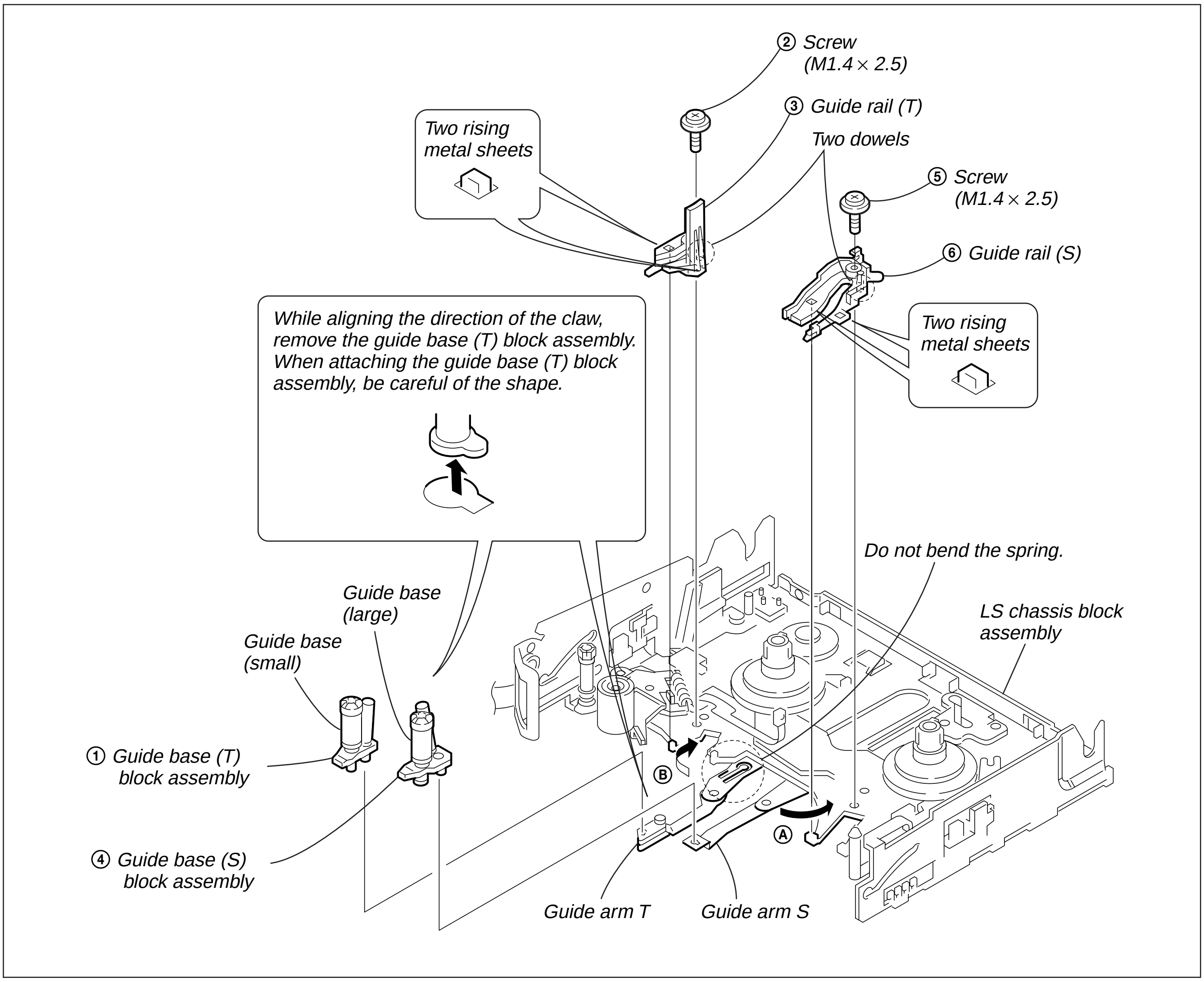

② Screw (M1.4 × 2.5)
③ Guide rail (T)
Two dowels
⑤ Screw (M1.4 × 2.5)
⑥ Guide rail (S)
Two rising metal sheets
Two rising metal sheets
While aligning the direction of the claw, remove the guide base (T) block assembly. When attaching the guide base (T) block assembly, be careful of the shape.
Do not bend the spring.
LS chassis block assembly
Guide base (large)
Guide base (small)
① Guide base (T) block assembly
④ Guide base (S) block assembly
Ⓑ
Ⓐ
Guide arm T
Guide arm S

Fig. 4-12.

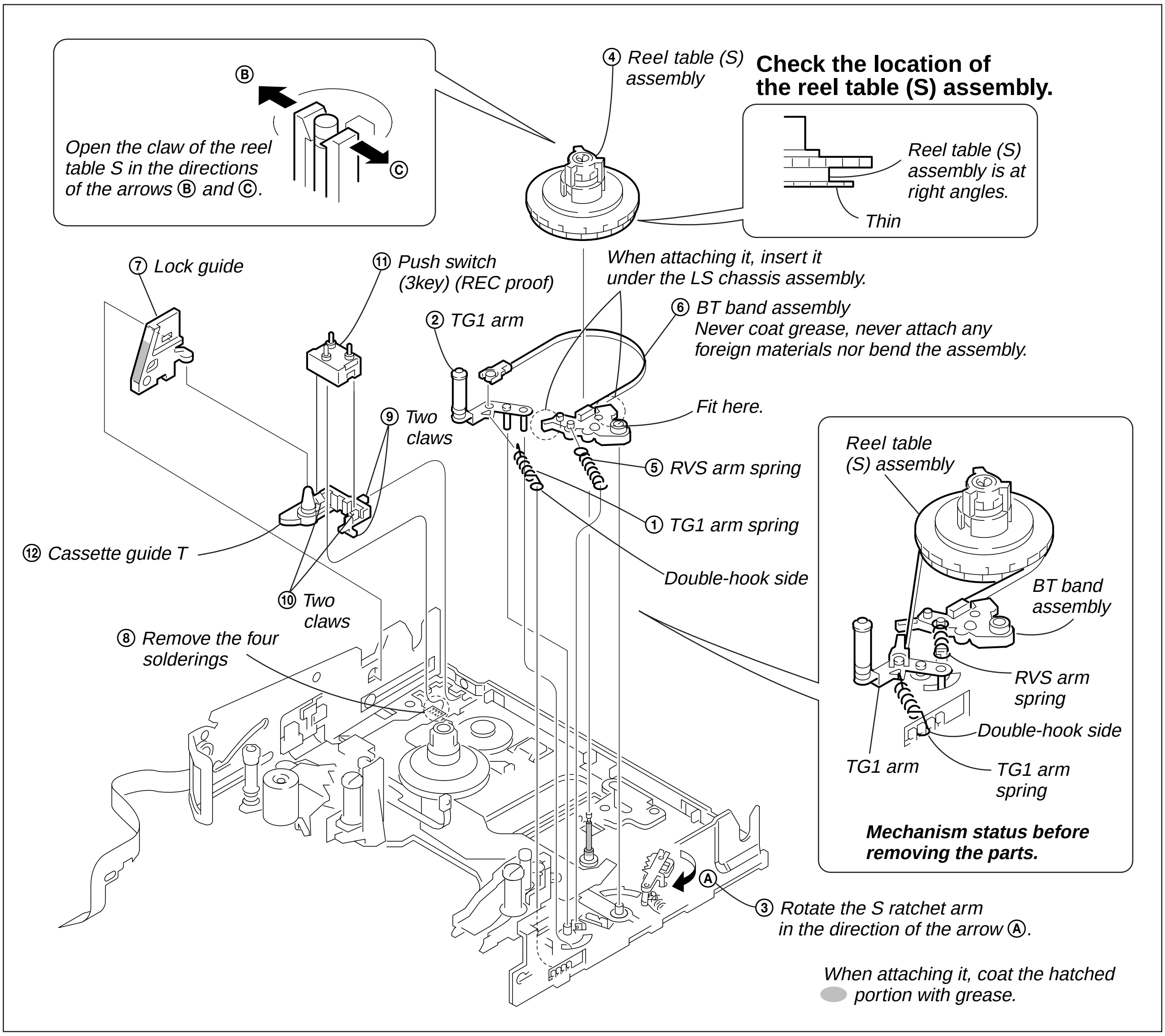
4-13. TG1 Arm, Reel Table (S) Assembly, Push Switch (3Key)

1. Removal procedure

1) Remove the TG1 arm spring ①.
   Note: Take note of the position where the spring has been hooked.
2) Remove the TG1 arm ②.
3) Open the claw of the reel table (S) assembly ④ in the directions of the arrows Ⓑ and Ⓒ and remove the reel table S assembly.
4) Remove the RVS arm spring ⑤.
5) Rotate the S ratchet arm ③ in the direction of the arrow Ⓐ and remove the BT band assembly ⑥.
6) Remove the lock guide ⑦.
7) Remove the four solderings of the LS-057 board.
8) Remove the two claws ⑨ of the cassette guide T ⑫ from the notch of the LS chassis.
9) Remove the push switch (3key) ⑪ by releasing the two claws of the cassette guide T ⑫.

2. Attachment procedure

1) Attach the push switch (3key) ⑪ to the cassette guide T ⑫ with the two claws ⑩.
2) Attach the cassette guide T ⑫ to the notch of the LS chassis block assembly with the two claws ⑨.
3) Solder the cassette guide T ⑫ to the LS-057 board at the four locations.
4) Attach the lock guide ⑦.
5) Attach the BT band assembly ⑥.
6) Check the location of the reel table S ④. Then, rotate the S ratchet arm ③ in the direction of the arrow Ⓐ and insert the band of the BT band assembly ⑥ into the groove on the side.
7) Attach the BT band assembly to the TG1 arm ② and attach it to the mechanism chassis block assembly.
8) Check the shape of the hook of the TG1 arm spring ①. Hook one end of the spring on the TG1 arm ②. Then, hook the other end of the spring on the same location of the LS chassis block assembly where you have taken note when the spring is removed.
9) Attach the RVS arm spring.
10) Check the TG1 back-tension. (Refer to 5-1.)
    Note: The BT band assembly ⑤ must be completely inserted into the groove on the side of the reel table (S) ④.


Ⓑ
Ⓒ
④ Reel table (S) assembly
Reel table (S) assembly is at right angles.
Thin
⑦ Lock guide
⑪ Push switch (3key) (REC proof)
② TG1 arm
⑥ BT band assembly
⑨ Two claws
Fit here.
⑤ RVS arm spring
① TG1 arm spring
Double-hook side
⑫ Cassette guide T
⑩ Two claws
⑧ Remove the four solderings
Reel table (S) assembly
BT band assembly
RVS arm spring
Double-hook side
TG1 arm
TG1 arm spring
Ⓐ

Open the claw of the reel table S in the directions of the arrows Ⓑ and Ⓒ.

Check the location of the reel table (S) assembly.

When attaching it, insert it under the LS chassis assembly.

Never coat grease, never attach any foreign materials nor bend the assembly.

Mechanism status before removing the parts.

③ Rotate the S ratchet arm in the direction of the arrow Ⓐ.

When attaching it, coat the hatched ● portion with grease.

Fig. 4-13.

4-14. Hall Element (H001, H002 (T/S Reel)), Photo Transistor (Q001, Q002 (Tape Top/Tape End), D001 (Tape LED)), LED (D001 (Tape LED))

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the LS grease cover.
3) Remove the two solderings and remove Q001 (tape top).
4) Remove the two solderings and remove Q002 (tape end).
5) Remove the two solderings and remove D001 (tape LED).
6) Remove the four solderings respectively from H001 (T reel) and H002 (S reel) and remove the H001 and H002.

2. Attachment procedure

1) Solder H001 (T reel) and H002 (S reel) respectively at the four locations.
2) Solder Q002 (tape end) at the two locations.
3) Solder Q001 (tape top) at the two locations.
4) Solder D001 (tape LED) at the two locations.
5) Attach the LS grease cover.
6) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

Note: Be careful of the plarities of the Hall element (H001, H002), Photo-transistor (Q001, Q002) and LED (D001).

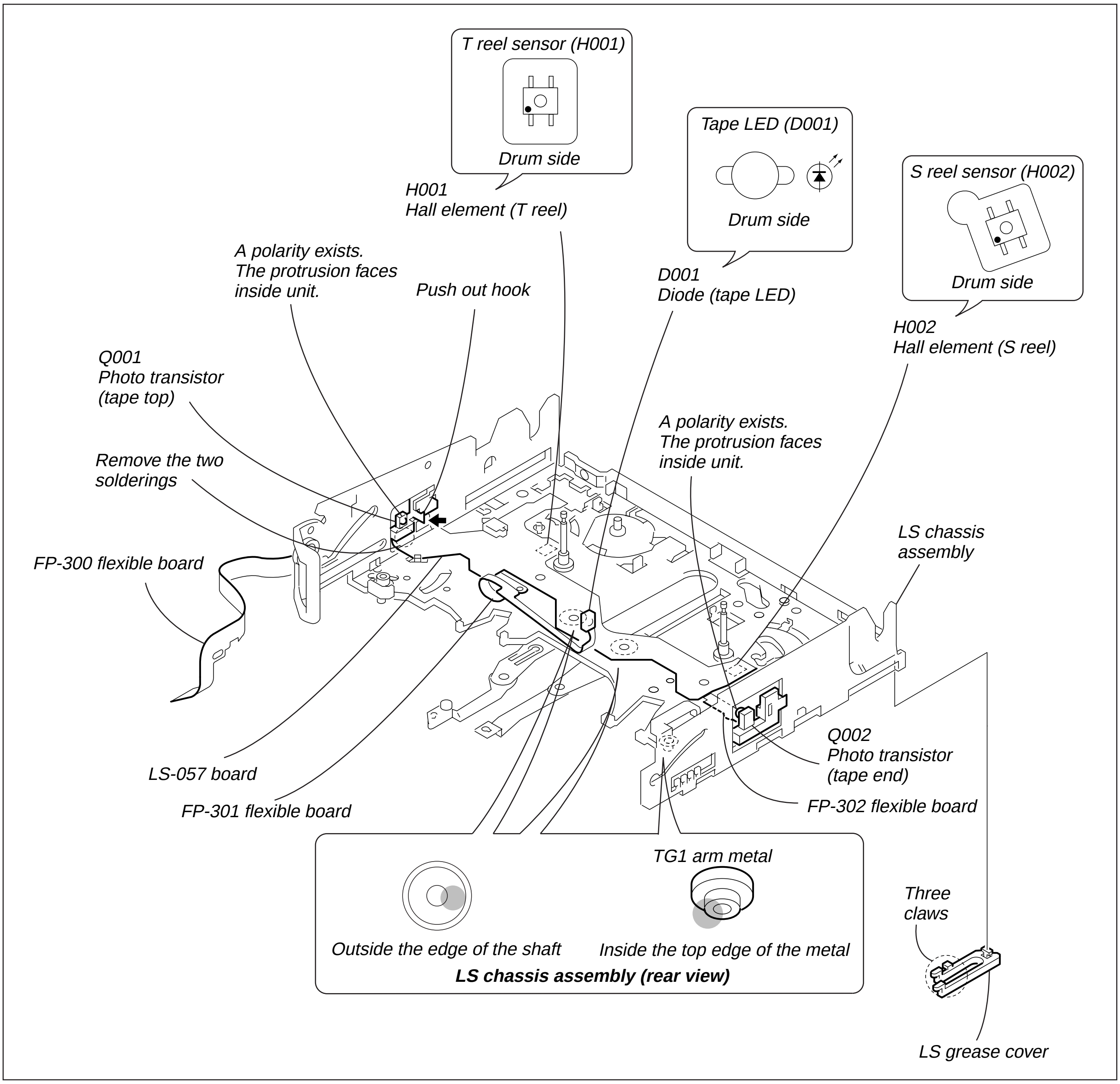

T reel sensor (H001)
Drum side
H001
Hall element (T reel)
Tape LED (D001)
Drum side
S reel sensor (H002)
Drum side
A polarity exists.
The protrusion faces
inside unit.
Push out hook
D001
Diode (tape LED)
H002
Hall element (S reel)
Q001
Photo transistor
(tape top)
A polarity exists.
The protrusion faces
inside unit.
Remove the two
solderings
LS chassis
assembly
FP-300 flexible board
Q002
Photo transistor
(tape end)
LS-057 board
FP-302 flexible board
FP-301 flexible board
TG1 arm metal
Three
claws
Outside the edge of the shaft
Inside the top edge of the metal
LS chassis assembly (rear view)
LS grease cover

Fig. 4-14.

4-15. LS Guide Roller, Guide Lock Plate (T), Pinch Pusher Assembly, Eject Arm

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the LS guide roller ①.
3) Remove the P pressure plate spring ②.
4) Remove the HLW cut (0.98 × 3 × 0.25) ③.
5) Remove the pitch pressure plate assembly ④ in the direction of the arrow Ⓐ.
6) Remove the relay gear ⑤.
7) Remove the screw (camera pan2 M1.4 × 1.6) ⑥.
8) Remove the guide lock plate (T) ⑦ in the direction of the arrow Ⓑ.
9) Remove the eject arm spring ⑧ and HLW cut (0.98 × 3 × 0.25) ⑨.
   Note: Do not reuse the HLW cut.
10) Remove the eject arm ⑩.

2. Attachment procedure

1) Attach the eject arm spring ⑧ to the eject arm ⑩.
2) Hook one end of the eject arm spring ⑧ on the protrusion of the main chassis block assembly and attach the eject arm to the shaft.
3) Attach the HLW cut (0.98 × 3 × 0.25) ⑨.
   Do not reuse the HLW cut.
4) Attach the guide lock plate T ⑦ while aligning it with the notches Ⓒ and Ⓓ.
5) Attach the screw (camera pan2 M1.4 × 1.6) ⑥.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
6) Attach the relay gear ⑤.
7) Attach the pinch pusher plate ④ with the HLW cut (0.98 × 3 × 0.25) ③.
8) Attach the P pressure plate spring ②.
   Insert the concave side of the LS guide roller ① into the shaft to attach the LS guide roller.
   Note: Insert the roller completely.
9) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

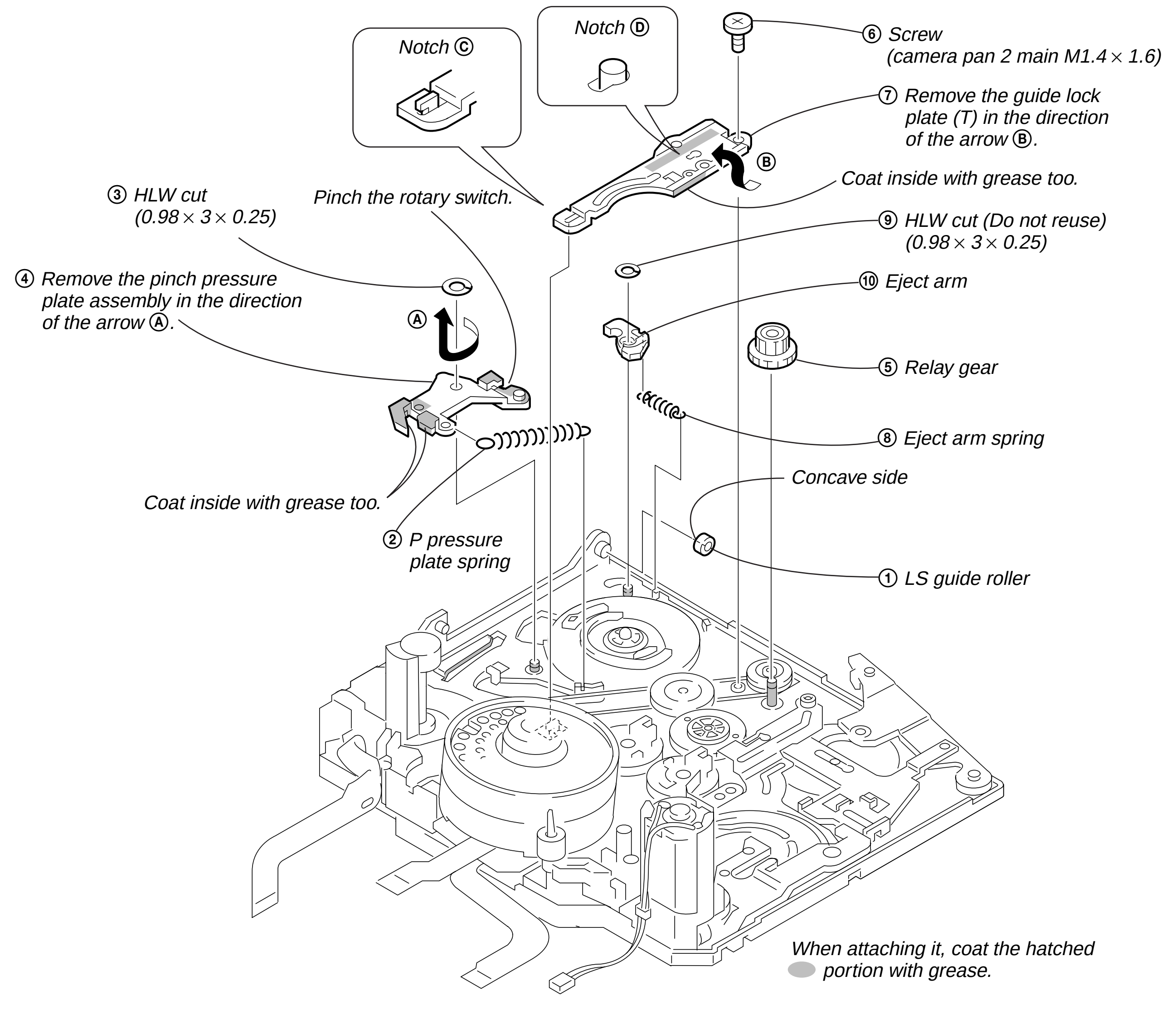

Notch Ⓒ
Notch Ⓓ
⑥ Screw (camera pan 2 main M1.4 × 1.6)
⑦ Remove the guide lock plate (T) in the direction of the arrow Ⓑ.
Ⓑ
Coat inside with grease too.
③ HLW cut (0.98 × 3 × 0.25)
Pinch the rotary switch.
⑨ HLW cut (Do not reuse) (0.98 × 3 × 0.25)
④ Remove the pinch pressure plate assembly in the direction of the arrow Ⓐ.
⑩ Eject arm
Ⓐ
⑤ Relay gear
⑧ Eject arm spring
Concave side
Coat inside with grease too.
② P pressure plate spring
① LS guide roller
When attaching it, coat the hatched
● portion with grease.

Fig. 4-15.

4-16. Rotary Switch, Cam Relay Gear, Change Gear Assembly, Timing Belt

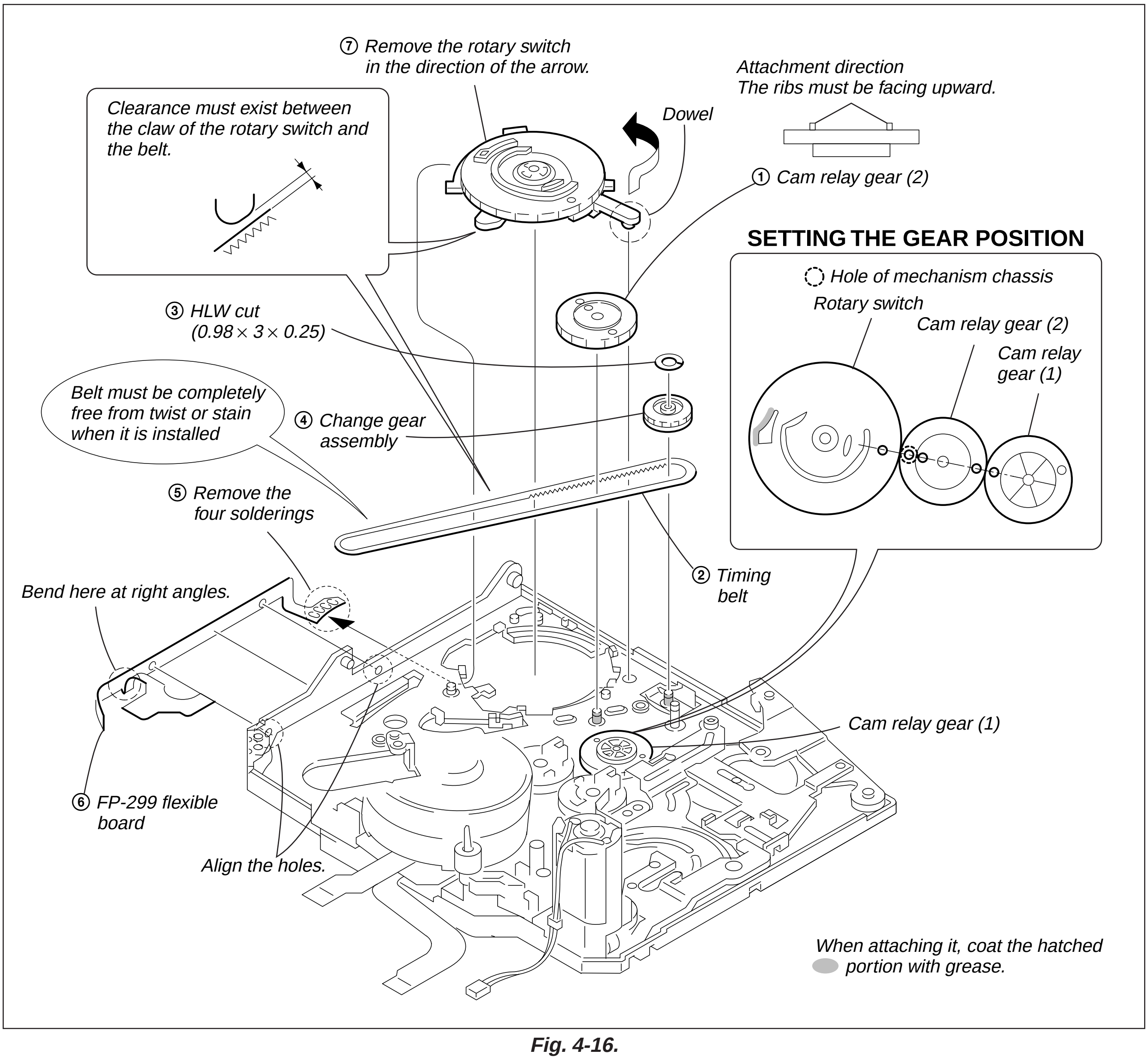
Before replacing the timing belt, remove the guide rail T2 and capstan motor. (Refer to 4-4.)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
3) Remove the cam relay gear ①.
4) Remove the timing belt ②.
5) Remove the HLW cut (0.98 × 3 × 0.25) ③ and change gear assembly ④.
6) Remove the four solderings ⑤ and remove the FP-299 flexible wiring board ⑥.
7) Push up the dowel of the rotary switch ⑦ from the bottom of the mechanism chassis assembly and remove the rotary switch in the direction of the arrow.

2. Attachment procedure

1) Insert the dowel of the rotary switch ⑦ into the hole on the mechanism chassis assembly and attach the rotary switch clockwise.
2) Align the FP-299 flexible wiring board ⑥ with the reference hole on the mechanism chassis and solder the flexible wiring board to the rotary switch ⑦ (at four locations).
3) Attach the change gear assembly ④ with the HLC cut (0.98 × 3 × 0.25)③.
4) Attach the timing belt ②.
   Note: There must be a clearance between the rotary switch ⑦ and timing belt ②.
5) Attach the cam relay gear ①.
   The in-phase markings of the rotary switch ⑦, cam relay gear (2) and cam relay gear (1) must be aligned.
6) Attach the guide lock plate (T), pinch pressure assembly and eject arm. (Refer to 4-15.)
7) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
8) Clean the shaft of the capstan motor. (Refer to 2-2.)



⑦ Remove the rotary switch in the direction of the arrow.
Attachment direction
The ribs must be facing upward.
Clearance must exist between the claw of the rotary switch and the belt.
Dowel
① Cam relay gear (2)
SETTING THE GEAR POSITION
Hole of mechanism chassis
Rotary switch
Cam relay gear (2)
Cam relay gear (1)
③ HLW cut (0.98 × 3 × 0.25)
Belt must be completely free from twist or stain when it is installed
④ Change gear assembly
⑤ Remove the four solderings
② Timing belt
Bend here at right angles.
Cam relay gear (1)
⑥ FP-299 flexible board
Align the holes.
When attaching it, coat the hatched portion with grease.

Fig. 4-16.

4-17. Guide Gear Assembly, Guide Gear T Assembly, Cam Relay Gear 1, Guide Lock Plate (S)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the screw (camera pan2 main M1.4 × 1.6) ①.
3) Remove the guide lock plate (S) ② in the direction of the arrow Ⓐ.
4) Remove the two stop rings (E type 1.2) ③.
5) Remove the guide gear (S) assembly ④ and guide gear (T) assembly ⑤.
6) Remove the HLW cut (0.98 × 3 × 0.25) ⑥.
7) Remove the cam relay gear (1) ⑦.

2. Attachment procedure

1) Attach the cam relay gear (1) ⑦ with the HLW cut (0.98 × 3 × 0.25) ⑥.
   Note: The in-phase markings of the cam relay gear (1) ⑦, cam gear (2) and cam relay gear must be aligned.
2) Attach the guide gear (T) assembly ⑤ and guide gear (S) assembly ④ to the shaft in this order and adjust the positions. Then, attach them with the two stop rings (E type 1.2) ③.
   Note1: The in-phase markings of the GL arm assembly, guide gear (S) ④ and guide gear (T) ⑤ must be aligned.
   Note2: The guide gear assembly (S/T) has a different shape respectively. Pay attention to the shapes.
3) Fit the guide lock plate (S) ② in the groove on the shaft and insert the portion Ⓑ into the notch. Then, attach the plate with the screw (camera pan2 main M1.4 × 1.6) ①.
   Tightening torque: 0.078 ± 0.01 N•m (0.8 ± 0.1 kgf•cm)
4) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)

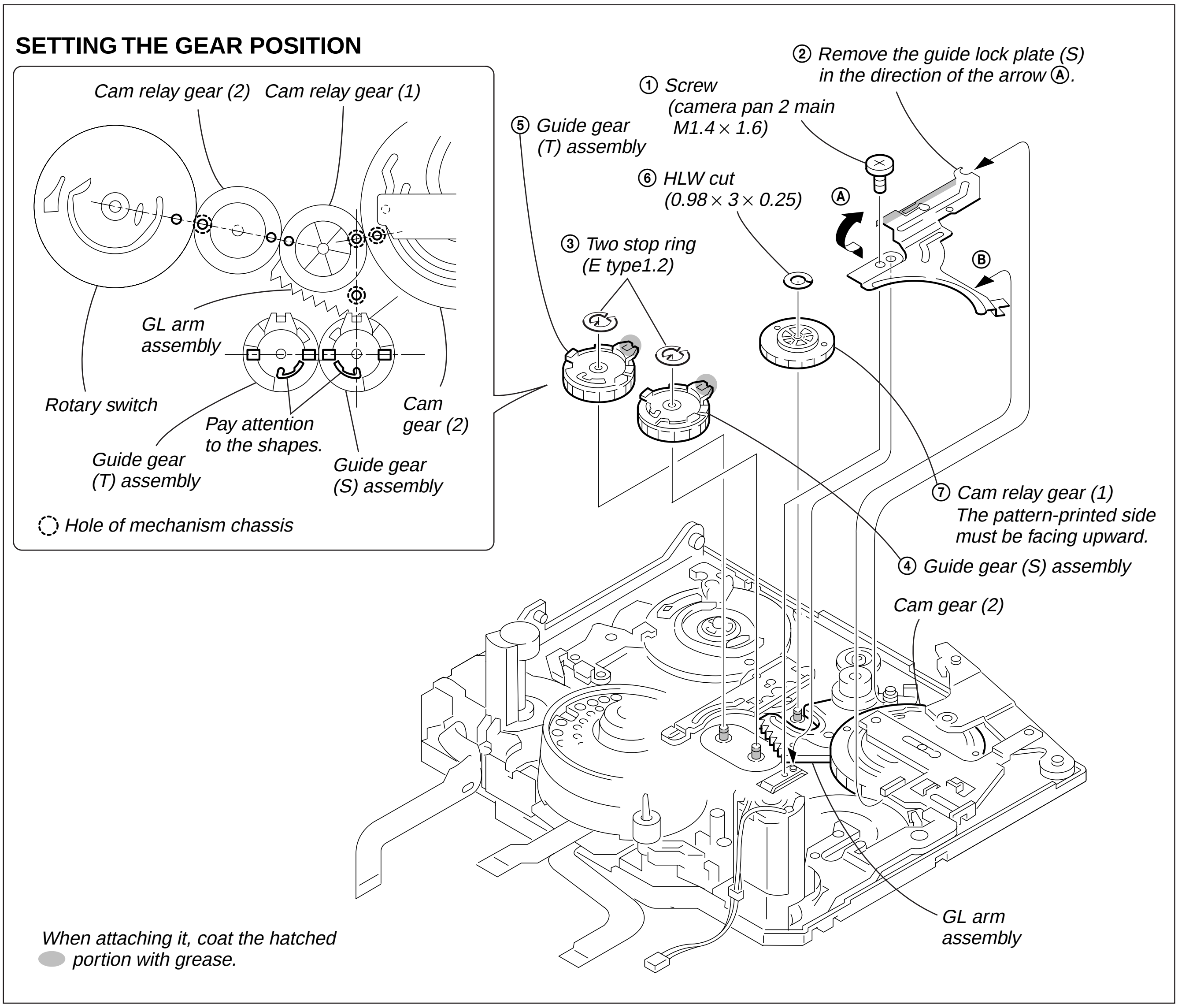

SETTING THE GEAR POSITION
Cam relay gear (2)
Cam relay gear (1)
GL arm assembly
Rotary switch
Pay attention to the shapes.
Cam gear (2)
Guide gear (T) assembly
Guide gear (S) assembly
◌ Hole of mechanism chassis
② Remove the guide lock plate (S) in the direction of the arrow Ⓐ.
① Screw (camera pan 2 main M1.4 × 1.6)
⑤ Guide gear (T) assembly
⑥ HLW cut (0.98 × 3 × 0.25)
Ⓐ
Ⓑ
③ Two stop ring (E type1.2)
⑦ Cam relay gear (1) The pattern-printed side must be facing upward.
④ Guide gear (S) assembly
Cam gear (2)
GL arm assembly
When attaching it, coat the hatched ● portion with grease.

Fig. 4-17.

4-18. LD Gear 4, Cam Gear 1, HC Drive Arm

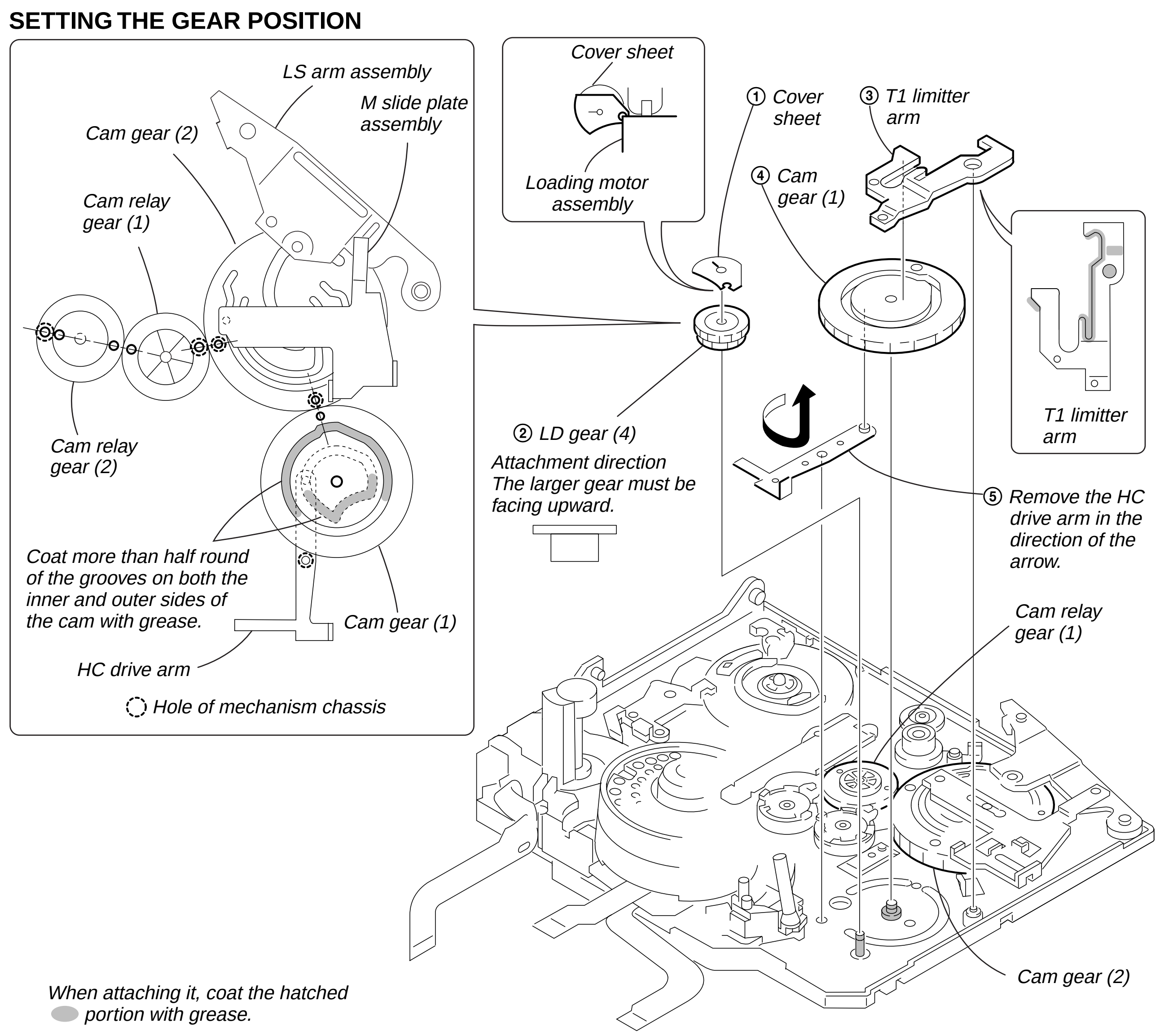
Remove in advance the HCL arm assembly and loading motor assembly beforehand. (Refer to 4-2.)

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (S). (Refer to 4-17.)
3) Remove the cover sheet ① and LD gear (4) ②.
4) Remove the T1 limiter arm ③ and cam gear (1) ④.
5) Remove the HC drive arm ⑤ in the direction of the arrow.

2. Attachment procedure

1) Attach the HC drive arm ⑤ under the drive base assembly.
2) Attach the cam gear (1) ④.
   The dowel of the HC drive arm ⑤ must be inserted into the groove on the lower side of the cam gear (1) ④.
   The in-phase markings of the cam gear (1) ④, cam gear (2) and cam relay gear (1) must be aligned.
3) Attach the LD gear (4) ② with the cover sheet ①.
4) Attach the guide plate (S).
5) Attach the LS chassis block assembly to the mechanical chassis. (Refer to 4-10.)
6) Clean the tape running path. (Refer to 2-2.)


SETTING THE GEAR POSITION
LS arm assembly
M slide plate assembly
Cam gear (2)
Cam relay gear (1)
Cam relay gear (2)
Coat more than half round of the grooves on both the inner and outer sides of the cam with grease.
Cam gear (1)
HC drive arm
◌ Hole of mechanism chassis
Cover sheet
Loading motor assembly
① Cover sheet
③ T1 limitter arm
④ Cam gear (1)
② LD gear (4)
Attachment direction
The larger gear must be facing upward.
T1 limitter arm
⑤ Remove the HC drive arm in the direction of the arrow.
Cam relay gear (1)
Cam gear (2)

When attaching it, coat the hatched ● portion with grease.

Fig. 4-18.

4-19. M Slide Plate Assembly, LS Arm Assembly, Cam Gear 2, GL Arm Assembly

1. Removal procedure

1) Remove the LS chassis block assembly. (Refer to 4-10.)
2) Remove the guide lock plate (S) (Refer to 4-17.)
3) Remove the relay gear ①.
4) Remove the M slide plate assembly ② in the direction of the arrow Ⓐ.
5) Remove the LS arm assembly ③ and LS arm roller ④.
6) Remove the cam gear (2) ⑤.
7) Remove the GL arm assembly ⑥ from the lower side of the cam relay gear (1) in the direction of the arrow Ⓑ.
   Note: After removing the GL arm assembly, fix the guide gear (S/T) assembly.

2. Attachment procedure

1) Attach the GL arm assembly ⑥ to the shaft so that the GL arm assembly ⑥ is positioned under the cam relay gear (1) .
   Note: The in-phase markings of the guide gear (S/T) assembly and GL arm assembly ⑥ must be aligned.
2) While aligning the cam gear (2) ⑤ with the dowel of the GL arm assembly, attach the cam gear (2) ⑤.
   Note: The in-phase markings of the cam relay gear (1), cam gear (1) and cam gear (2) ⑤ must be aligned.
3) Attach the LS arm roller ④ to the LS arm assembly ③. While aligning them with the cam groove on the cam gear (2) ⑤, attach them.
4) Attach the M slide plate assembly ②.
5) Attach the relay gear ①.
6) Attach the guide lock plate (S). (Refer to 4-17.)
7) Attach the LS chassis block assembly to the mechaical chassis. (Refer to 4-10.)

Note: Check that the in-phase marking of each gear is aligned.

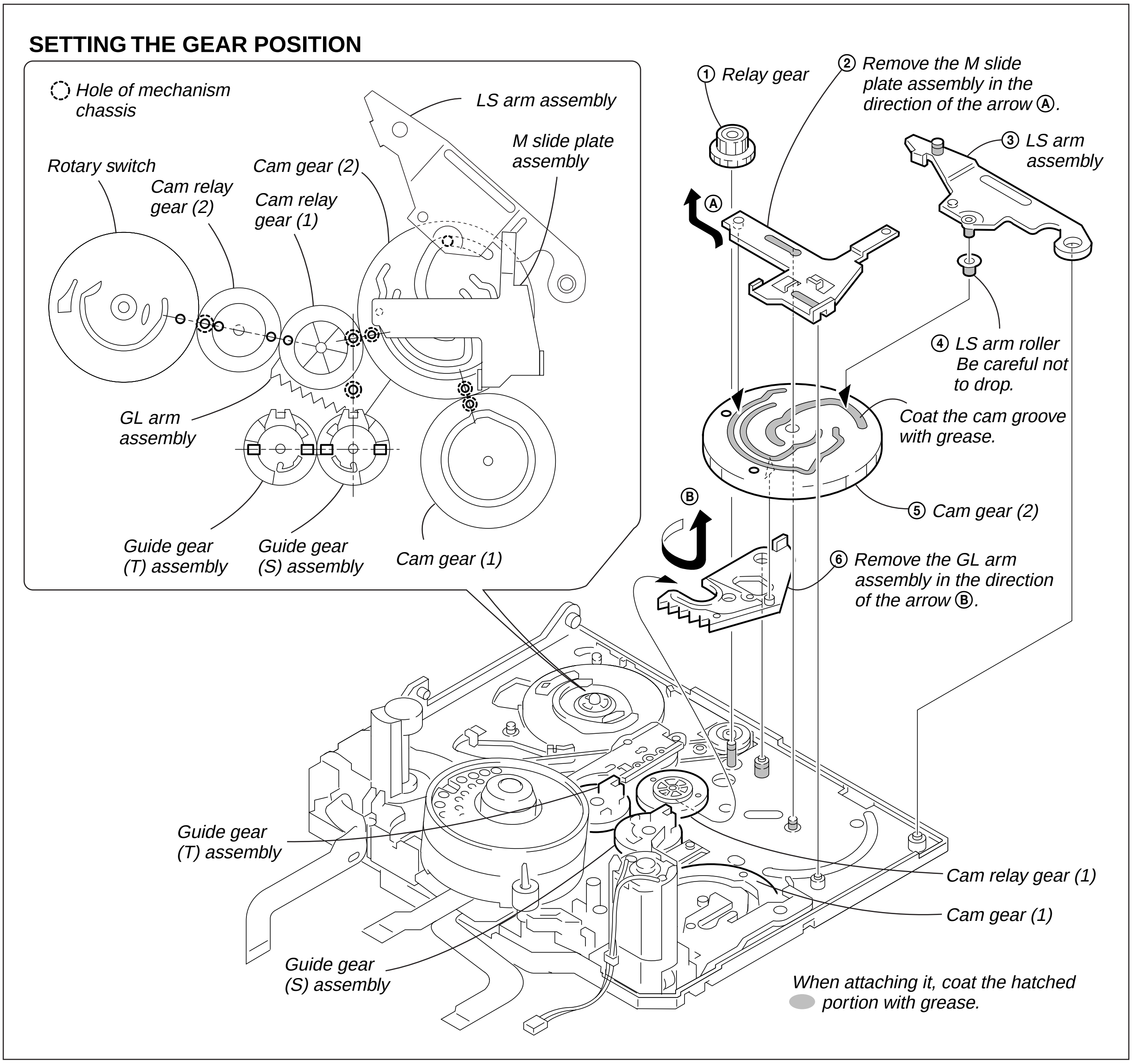

SETTING THE GEAR POSITION
Hole of mechanism chassis
Rotary switch
Cam relay gear (2)
Cam gear (2)
Cam relay gear (1)
LS arm assembly
M slide plate assembly
GL arm assembly
Guide gear (T) assembly
Guide gear (S) assembly
Cam gear (1)
① Relay gear
② Remove the M slide plate assembly in the direction of the arrow Ⓐ.
③ LS arm assembly
Ⓐ
④ LS arm roller Be careful not to drop.
Coat the cam groove with grease.
Ⓑ
⑤ Cam gear (2)
⑥ Remove the GL arm assembly in the direction of the arrow Ⓑ.
Guide gear (T) assembly
Cam relay gear (1)
Cam gear (1)
Guide gear (S) assembly
When attaching it, coat the hatched portion with grease.

Fig. 4-19.

5. Adjustment

5-1. Check and Adjustment of TG1 Back-tension Position

1. Check Procedure

1) Assemble the mechanism deck into the main unit.
2) Thread a normal tape and let the machine enter the PB (or REC) mode.
3) Check that the distance between the upper flange of the TG1 guide and the side surface of the LS chassis block is 12.0 ± 0.4 mm (range of fluctuation: 0.5 mm or less).

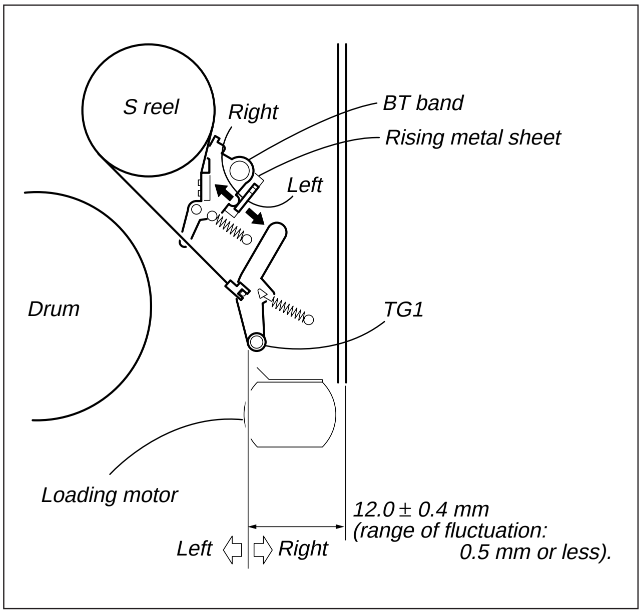

S reel
Right
BT band
Rising metal sheet
Left
Drum
TG1
Loading motor
12.0 ± 0.4 mm
(range of fluctuation:
0.5 mm or less).
Left
Right

Fig. 5-1.

2. Adjustment Procedure

1) Remove the cassette compartment and the blind plate.
2) Adjust the position of the TG1 guide by changing the tilt of the rising metal sheet of the LS chassis block assembly.

5-2. Check and Adjustment of FWD/RVS Back-tension

1. Check Procedure

1) Install the mechanism deck in the main unit and set the take-up torque cassette (Ref. No. J-7).
2) Check the FWD/RVS take-up torque.
   Check the FWD torque in the PLAY state.
   Specified value: 7 to 12 gf•cm
   Check the RVS torque in the RVS state.
   Specified value: 19.5 to 29.5 gf•cm

2. Adjustment Procedure

1) If the value of the FWD torque is larger than the specifications, change the position where the TG1 arm spring is hooked in the direction of the arrow Ⓐ. If the value of the FWD torque is smaller than the specifications, change the position in the direction of the arrow Ⓑ.

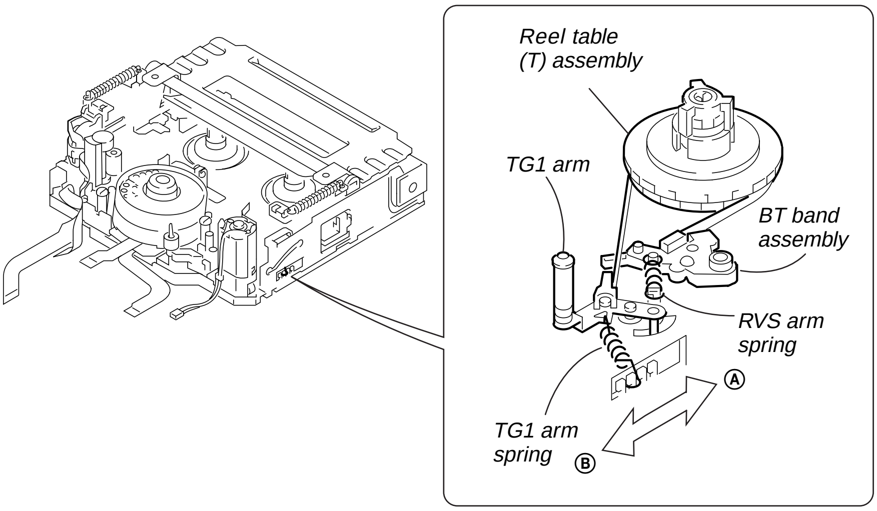

Reel table
(T) assembly
TG1 arm
BT band
assembly
RVS arm
spring
Ⓐ
TG1 arm
spring
Ⓑ

Fig. 5-2.

5-3. Capstan Motor Azimuth Position Adjustment

1. Check Procedure

1) Insert the thickness gauge (Ref. No. J-16) of 0.75 mm between the protrusion of the mechanism chassis and the capstan motor, and check the azimuth position.

2. Adjustment Procedure

1) Loosen the capstan azimuth adjustment screw (SANG camera pan 2 M1.4 × 4.5), and insert the thickness gauge (0.75 mm)(Ref. No. J-16) between the protrusion of the mechanism chassis and the capstan motor.
2) Slowly tighten the capstan azimuth adjustment screw until it slightly contacts the thickness gauge, and remove the thickness gauge.

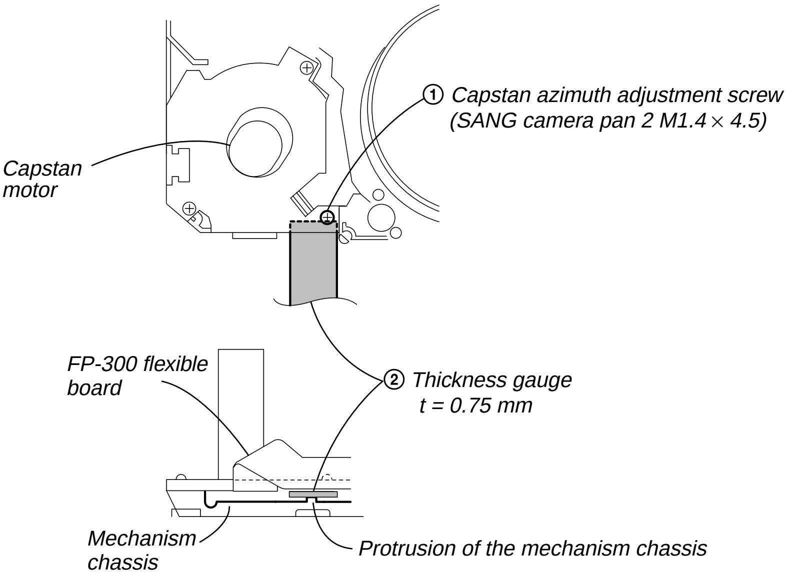

① Capstan azimuth adjustment screw
(SANG camera pan 2 M1.4 × 4.5)
Capstan motor
FP-300 flexible board
② Thickness gauge
t = 0.75 mm
Mechanism chassis
Protrusion of the mechanism chassis

Fig. 5-3.

5-4. Tape Path Adjustment

Purpose: Adjust the linearity of the head.

If the adjustment is not correct:
Noise appears on the top and bottom of the screen when playing back the tape that is recorded by other recorders.

5-4-1. Adjustment Preparation

1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller).
2) Connect the adjustment remote commander to the remote terminal.
3) Set the adjustment remote commander to the PATH mode (track shift mode)* and release the auto tracking.
4) Connect an oscilloscope as follows:
   CH1: Test connector' PB RF terminal
   External trigger: Test connector' RF SWP terminal
5) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
6) Confirm that the RF waveform on scope is flat both at entrance side and exit side.
   If the RF waveform is not flat, perform the adjustment by referring to section 4-2.)
7) After the adjustment is completed, release the PATH mode (track shift mode)*.

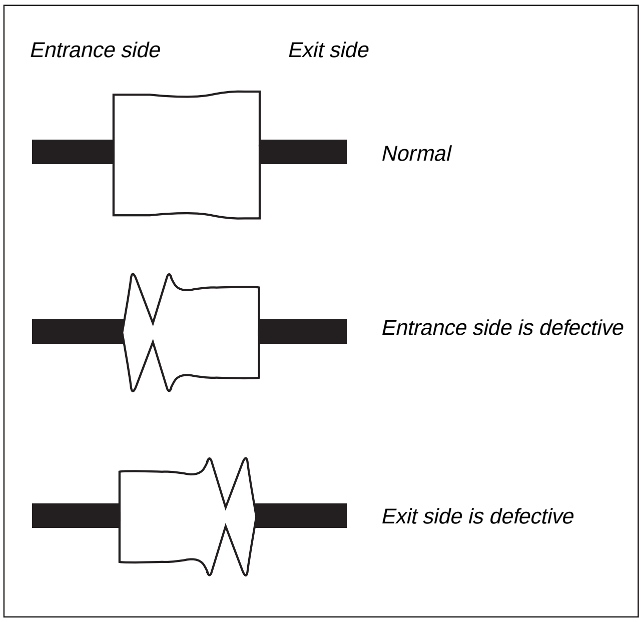


Fig. 5-4.

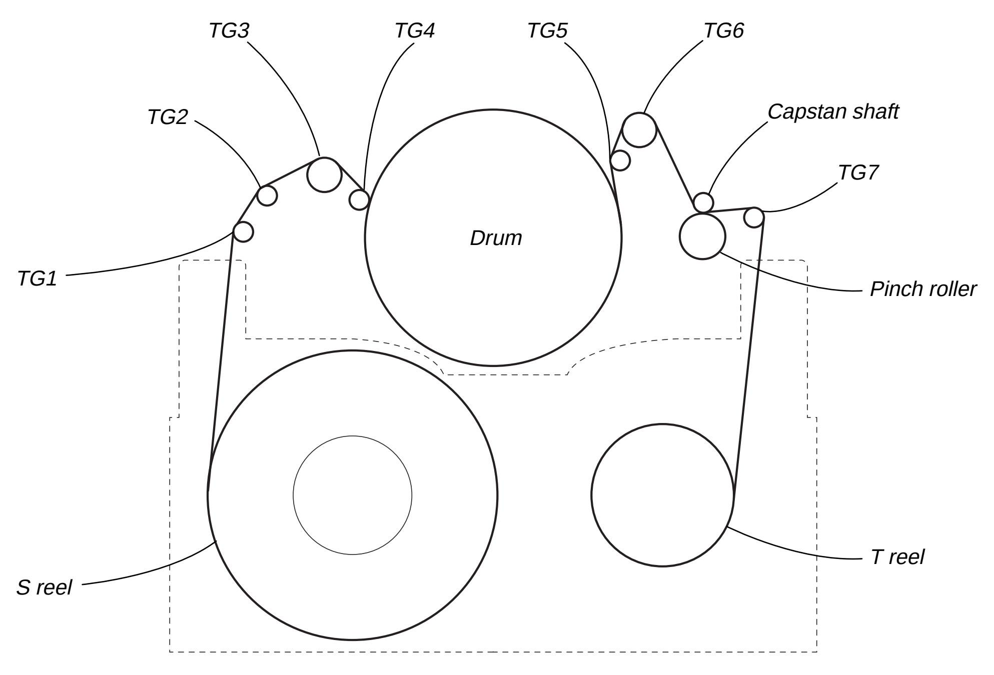


Fig. 5-5.

* **Setting and releasing the track shift mode**

In case of the DCR-TRV230

Setting

1. Select page: 0, address: 01 and set data: 01.
2. Select page: F, address: 22 and set data: 88, and press the PAUSE button.
3. Select page: 2, address: 2E and set data: 02. (Note)

Releasing

1. Select page: 0, address: 01 and set data: 01.
2. Select page: F, address: 22 and set data: 80, and press the PAUSE button.
3. Select page: 2, address: 2E and set data: 00.
4. Select page: 0, address: 01 and set data: 00. (Note)

Note: In case of the Digital8 only, set the data of page: 2, address: 2E.

5-4-2. Tracking Adjustment (Refer to Fig. 5-6.)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL) (Ref. No. J-6).
2) Adjust the No.3 guide until the envelope at the entrance side waveform becomes flat.
3) Adjust the No.6 guide until the envelope at the exit side waveform becomes flat.

☆ The TG-3/6 zenith adjustment screws do not need to be adjusted.

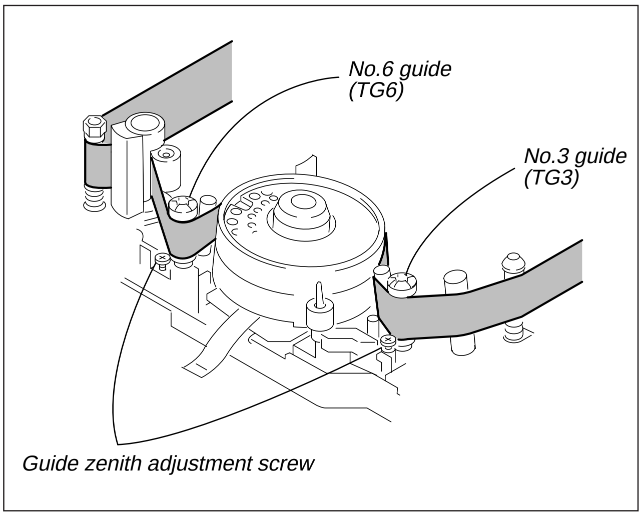

No.6 guide (TG6)
No.3 guide (TG3)
Guide zenith adjustment screw

Fig. 5-6.

5-4-3. No.7 Guide (TG7) Adjustment (Refer to Fig. 5-7.)

1) Playback the tape and set the REV mode.
2) Confirm that tape slack does not occur in between the No.6 guide (TG6) ① and capstan ②. If any tape slack occurs, rotate the TG7 nut ④ of the No.7 guide (TG7) ③ to remove the tape slack.
3) Playback the tape again and confirm that tape slack does not occur between the capstan ② and No.7 guide (TG7) ③. If the tape slack occurs exceeding the specifications (specifications: 0.5 mm or less), rotate the TG7 nut ④ to make the tape slack below the specifications (0.5 mm). When the tape slack between the No.6 guide (TG6) ① and capstan ② is 0.3 mm or less in the REV mode, it means that the adjustment is completed.

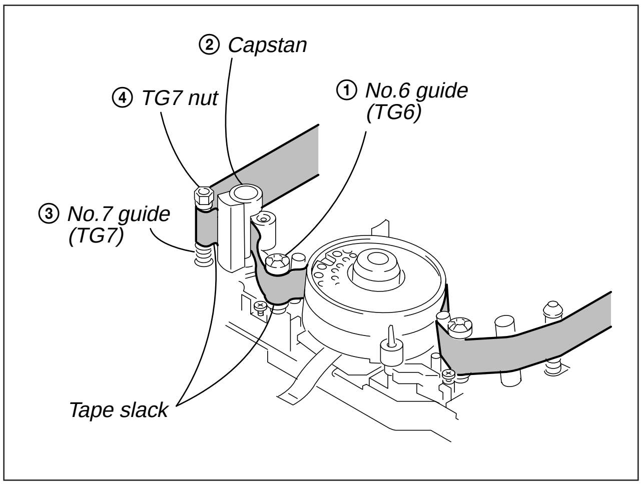

② Capstan
④ TG7 nut
① No.6 guide (TG6)
③ No.7 guide (TG7)
Tape slack

Fig. 5-7.

5-4-4. CUE and REV Waveform Check (Refer to Fig. 5-8)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6) and enter the REV mode.
   Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more.
   If pitches between peaks of the RF waveform are not equal, perform sections “5-4-2 Tracking Adjustment” and “5-4-3 No. 7 Guide (TG7) Adjustment”.
2) Enter the UCE mode. Confirm on an oscilloscope that the pitches between the peaks of the RF waveform are equally spaced for 5 seconds or more.
   If pitches between peaks of the RF waveform are not equal, perform section “5-4-2 Tracking Adjustment”.

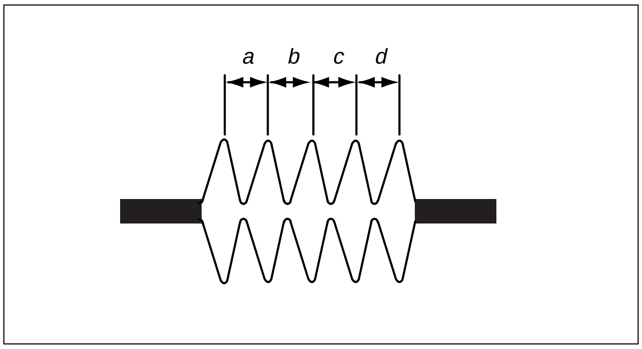


Fig. 5-8.

5-4-5. Check upon Completion of Adjustment

5-4-5-1. Tracking Check

1) Playback the tracking alignment tape in the PATH mode. Compare the amplitude of the RF waveform in the AUTO tracking mode and with that in the PATH mode. Confirm that the amplitude of the RF waveform decreases to about 3/4 when the tracking alignment tape is switched from the AUTO tracking mode to the PATH mode. (Refer to Fig. 5-9)
2) During step 1, confirm that the minimum amplitude (E MIN) is 65% or more of the maximum amplitude (E MAX) of the RF waveform. (Refer to Fig. 5-10)
3) Confirm that the RF waveform does not fluctuate too excessively.(Refer to Fig. 5-11)

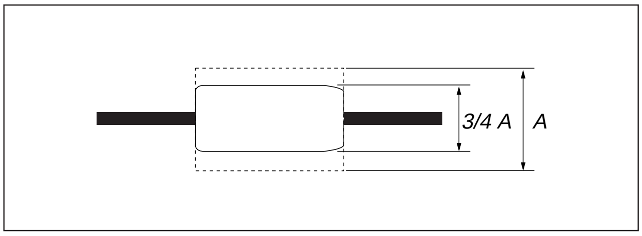


Fig. 5-9.

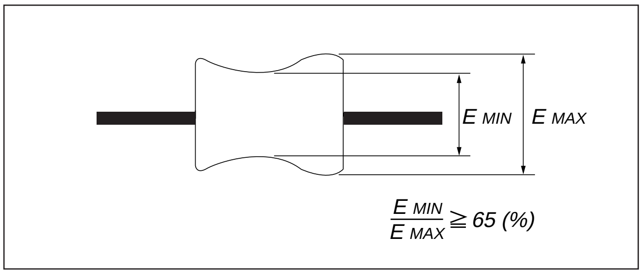


Fig. 5-10.

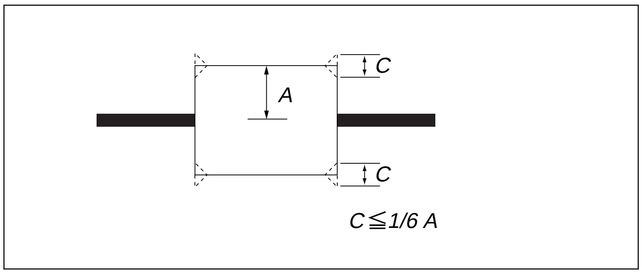


Fig. 5-11.

5-4-5-2. Rise-up Check (Refer to Fig. 5-12)

1) Playback the tracking alignment tape WR5-1NP (NTSC), WR5-1CP (PAL)(Ref. No. J-6).
2) Turn OFF the Track Shift mode.
3) Eject the cassette tape once. Then insert the cassette tape for loading again.
4) Confirm that the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
5) Run the tape in the CUE/REV and the FF/REW mode. Then playback the tracking alignment tape and confirm the RF waveform rises up to the flat envelope within 3 seconds after the machine enters the PLAY mode. Check also that the tape slack does not occur at around the pinch roller.
6) Repeat the above steps 3) to 5) once again for re-check.

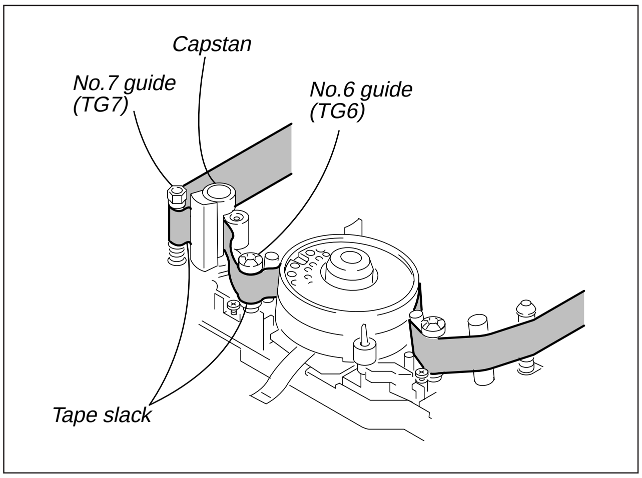


Fig. 5-12.

5-4-5-3. Tape Run Check (Refer to Fig. 5-13)

1) Playback the thin video tape such as P6-120MP (NTSC), P6-90MP (PAL). Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the top flange of the No. 3 guide (TG3), at the top flange of the No. 6 guide (TG6) and at both the top and bottom flanges of the No. 7 guide (TG7).
2) Confirm that tape does not float and the major tape curl of more than 0.3 mm does not occur at the flanges of the respective guide when the FF button is pressed during PLAY mode to enter the CUE mode and when the REW button is pressed during PLAY mode to enter the REV mode.

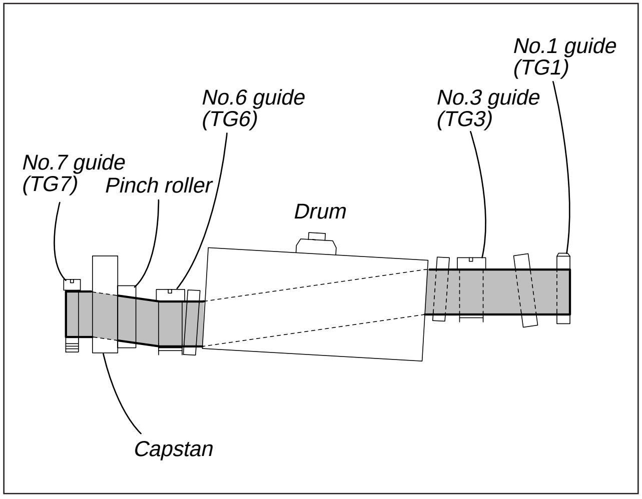
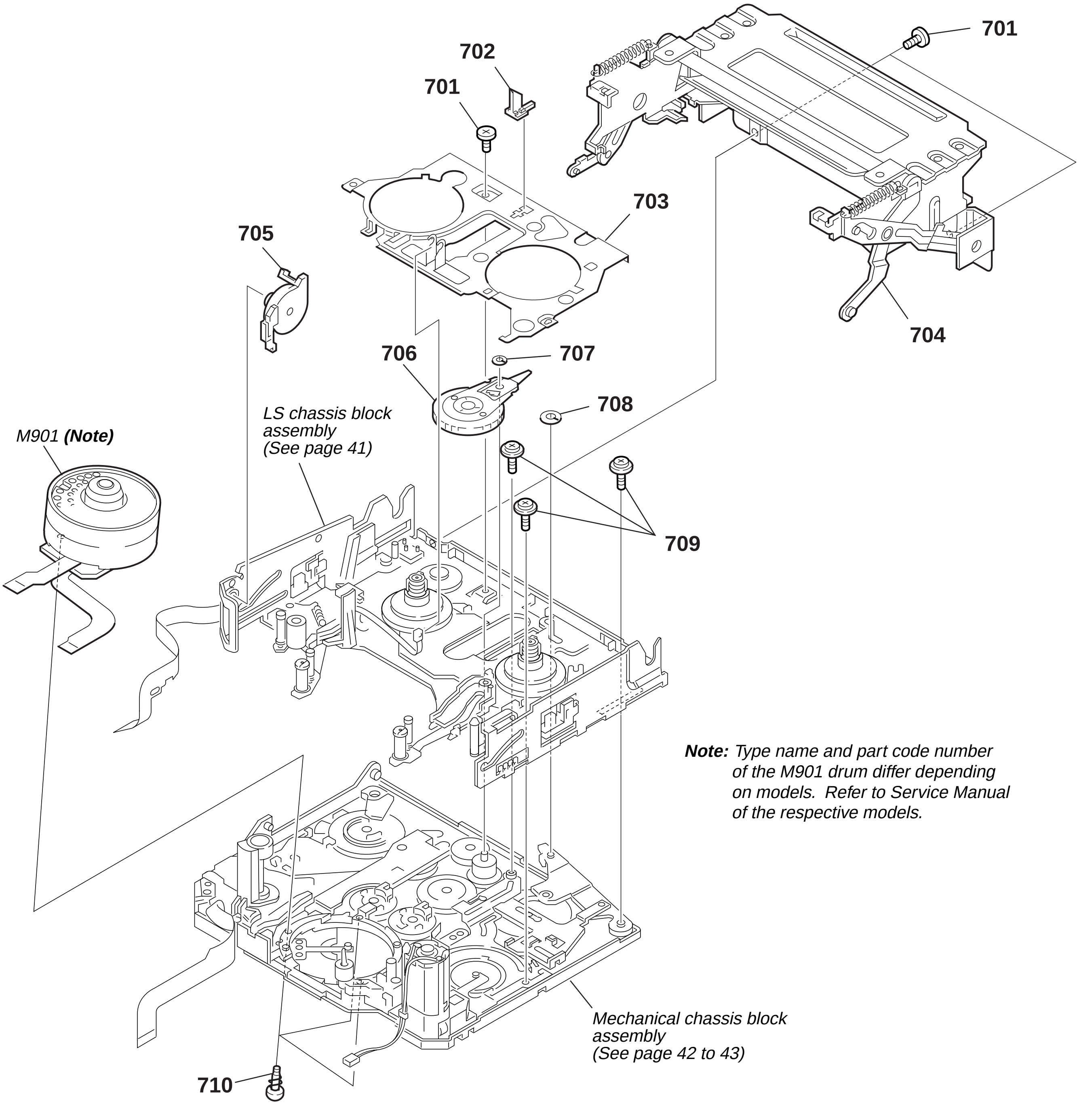


Fig. 5-13.

6. Exploded Views

6-1. Cassette Compartment Assy, Drum Assy



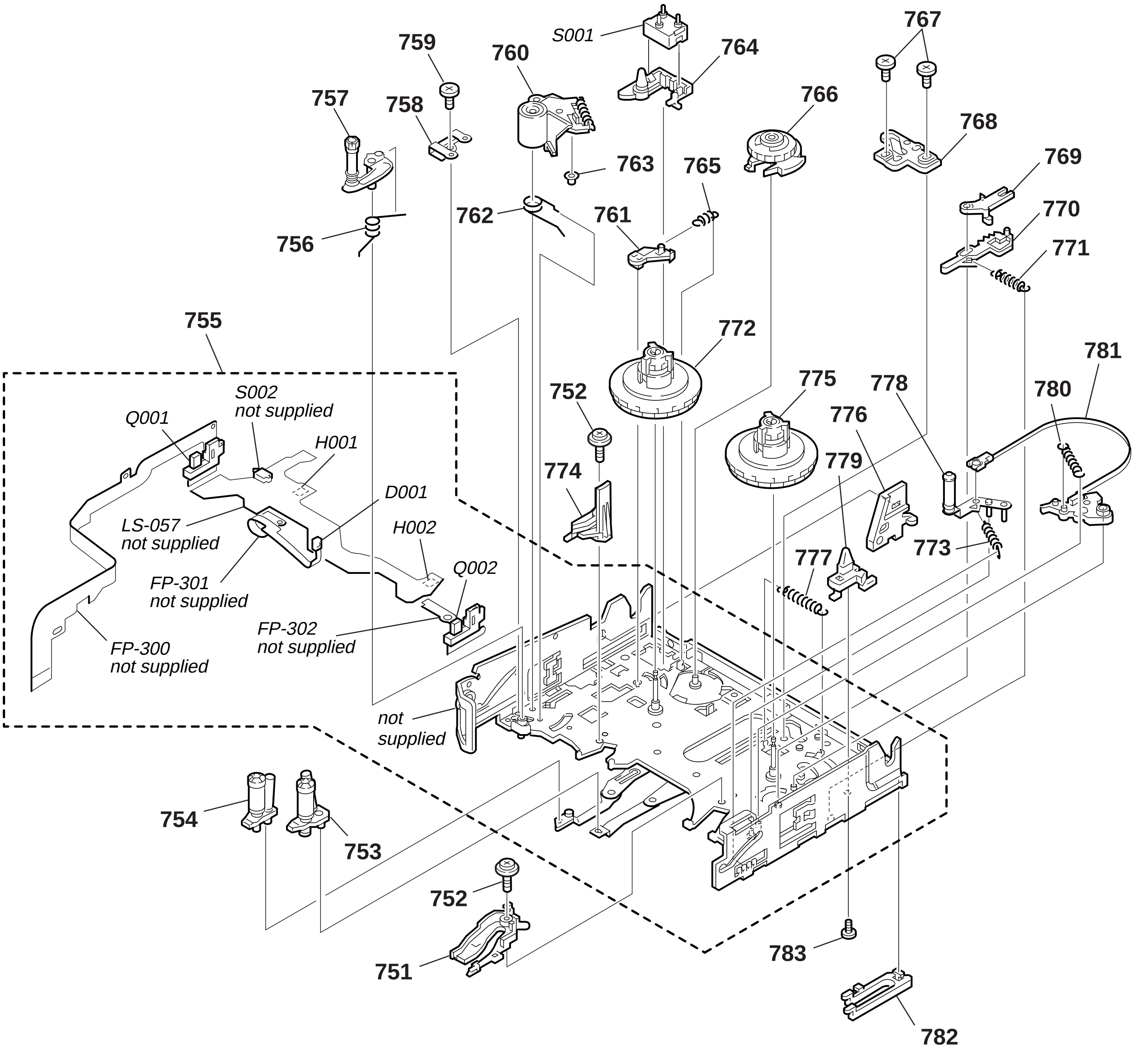
701
702
701
703
705
704
706
707
708
LS chassis block assembly (See page 41)
M901 **(Note)**
709
Mechanical chassis block assembly (See page 42 to 43)
710

Note: *Type name and part code number of the M901 drum differ depending on models. Refer to Service Manual of the respective models.*

Ref. No.	Part No.	Description	Remarks
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
702	3-065-895-01	LEVER, REEL RELEASE	
703	3-065-896-01	PLATE, BLIND	
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY	
705	X-3951-302-1	DAMPER ASSY	
706	X-3951-297-1	GEAR ASSY, R DRIVE	

Ref. No.	Part No.	Description	Remarks
707	3-065-840-01	CUT (0.98X3X0.13), LUMILER (W)	
708	3-065-935-01	HLC CUT (1.8X4X0.5)	
709	3-947-503-01	SCREW (M1.4)	
710	X-3951-299-1	SCREW ASSY, DRUM FITTING	
M901	— Note —	DRUM	

6-2. LS Chassis Block Assembly



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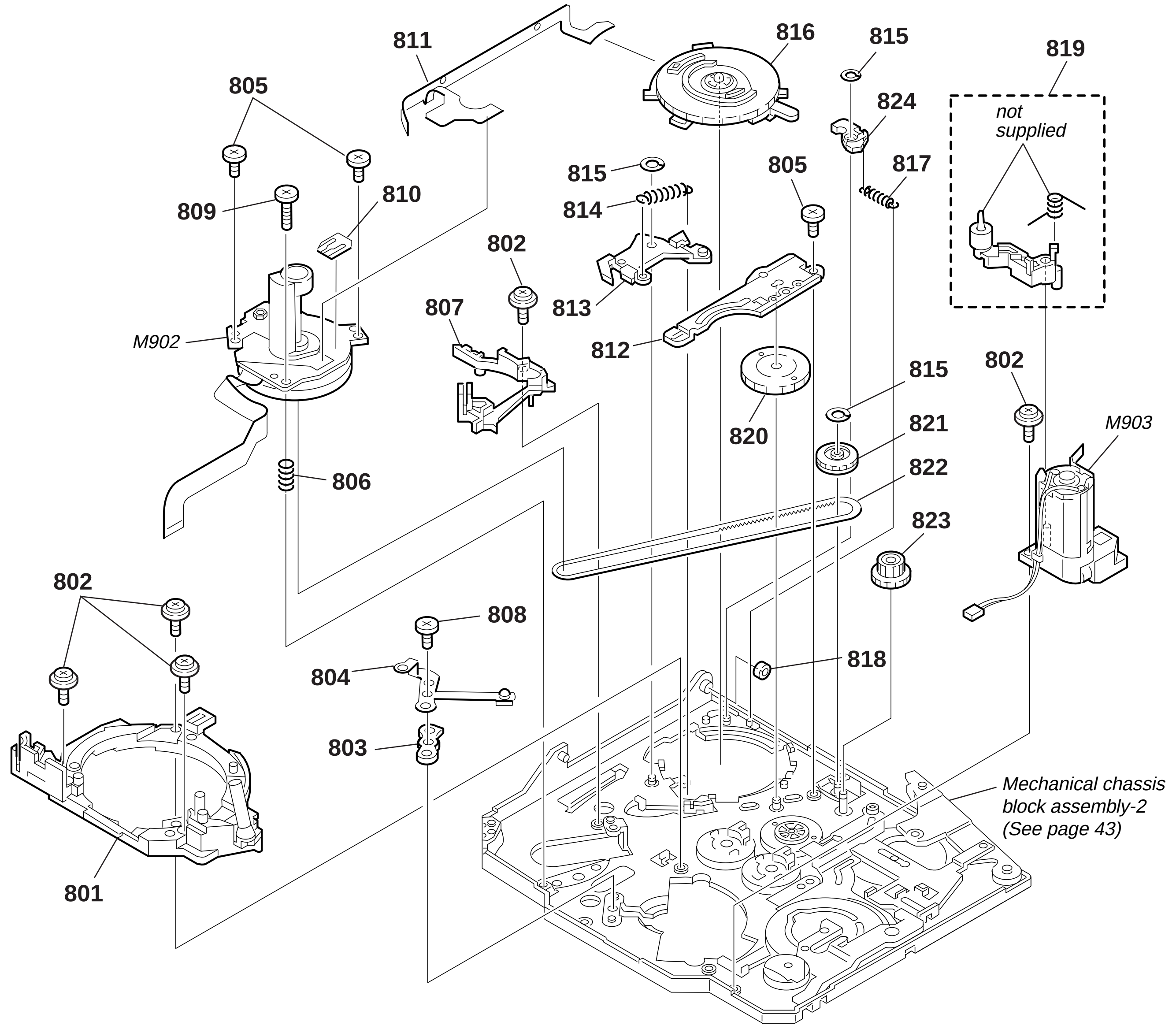
S001
764
767
757
758
766
768
769
763
765
762
761
770
756
771
755
772
781
752
775
778
780
S002
not supplied
Q001
H001
776
774
779
D001
LS-057
not supplied
H002
773
777
Q002
FP-301
not supplied
FP-302
not supplied
FP-300
not supplied
not
supplied
754
753
752
783
751
782

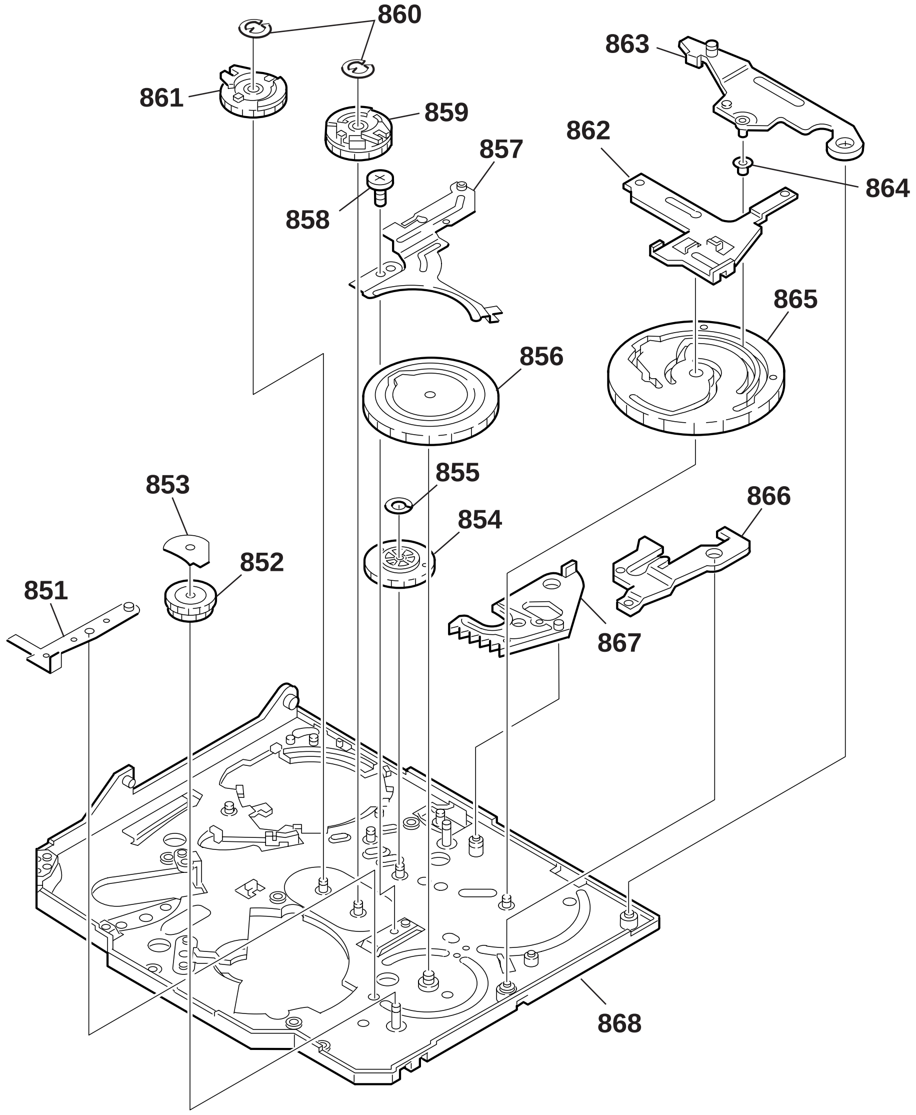
Ref. No.	Part No.	Description	Remarks
751	3-065-822-01	RAIL (S), GUIDE	
752	3-947-503-01	SCREW (M1.4)	
753	A-7096-416-A	BASE (S) BLOCK ASSY, GUIDE	
754	A-7096-415-A	BASE (T) BLOCK ASSY, GUIDE	
755	A-7096-426-A	CHASSIS ASSY, LS	
756	3-065-802-01	SPRING, TG7 ARM	
757	A-7096-414-A	ARM BLOCK ASSY, TG7	
758	3-065-801-01	RETAINER, TG7	
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
760	X-3951-303-1	ARM ASSY, PINCH	
761	3-065-823-01	ARM, T RATCHET	
762	3-065-794-01	ROAD (SPR), PINCH ARM	
763	3-065-792-01	ROLLER, P LIM ARM	
764	3-065-834-01	GUIDE (T), CASSETTE	
765	3-065-824-01	SPRING, T RATCHET	
766	A-7096-417-A	SOFT ASSY, T	
767	7-627-852-38	SCREW,PRECISION +P1.7X1.8 TYPE3	
768	3-065-832-01	PLATE, LS CAM	
769	3-065-828-01	ARM, S RATCHET	
770	3-065-829-01	PLATE, S RATCHET (RE)	
771	3-065-830-01	SPRING, S RATCHET	
772	X-3951-288-1	TABLE (T) ASSY, REEL	
773	3-065-819-01	SPRING, TG1 ARM	
774	3-065-821-01	RAIL (T), GUIDE	
775	X-3951-289-1	TABLE (S) ASSY, REEL	
776	3-065-833-01	GUIDE, LOCK	
777	3-065-831-01	PLATE (SPR), RE RETURN	
778	X-3951-304-1	ARM ASSY, TG1	
779	3-065-835-01	GUIDE (S), CASSETTE	
780	3-065-820-01	SPRING, RVS ARM	
781	X-3951-296-1	BAND (ASSY), BT	
782	3-065-836-01	COVER, LS GREASE	
783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING	
D001	8-719-988-42	DIODE GL453 (TAPE LED)	
H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	
S001	1-692-614-11	SWITCH, PUSH (3 KEY) (REC PROOF)	

6-3. Mechanical Chassis Block Assembly-1


811
816
815
819
805
824
not supplied
815
805
817
809
810
814
802
807
813
M902
812
815
802
820
821
M903
806
822
823
802
808
818
804
803
Mechanical chassis block assembly-2 (See page 43)
801

Ref. No.	Part No.	Description	Remarks
801	A-7096-422-A	BASE ASSY, DRUM	
802	3-947-503-01	SCREW (M1.4)	
803	3-065-928-01	SPACER, GROUND	
804	3-065-927-01	GROUND, DRUM	
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
806	3-067-154-01	SPRING, CAPSTAN	
807	3-065-931-01	RAIL (T2), GUIDE	
808	X-3947-398-1	SCREW ASSY, M1.7 PW	
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA	
810	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)	
811	1-680-434-11	FP-299 FLEXIBLE BOARD	
812	3-065-877-01	PLATE (T), GUIDE LOCK	
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE	
814	3-065-881-01	SPRING, P PRESSURE PLATE	
815	3-065-934-01	HLW CUT 0.98X3X0.25	
816	1-786-096-11	SWITCH, ROTARY	
817	3-065-898-01	SPRING, EJECT ARM	
818	3-065-870-01	ROLLER, LS GUIDE	
819	A-7096-421-A	ARM ASSY, HCL	
820	3-065-918-01	GEAR (2), CAM RELAY	
821	A-7096-419-A	GEAR ASSY, CHANGE	
822	3-065-902-01	BELT, TIMING	
823	3-065-905-01	GEAR, RELAY	
824	3-065-882-01	ARM, EJECT	
M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)	
M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)	

6-4. Mechanical Chassis Block Assembly-2


860
863
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852
851
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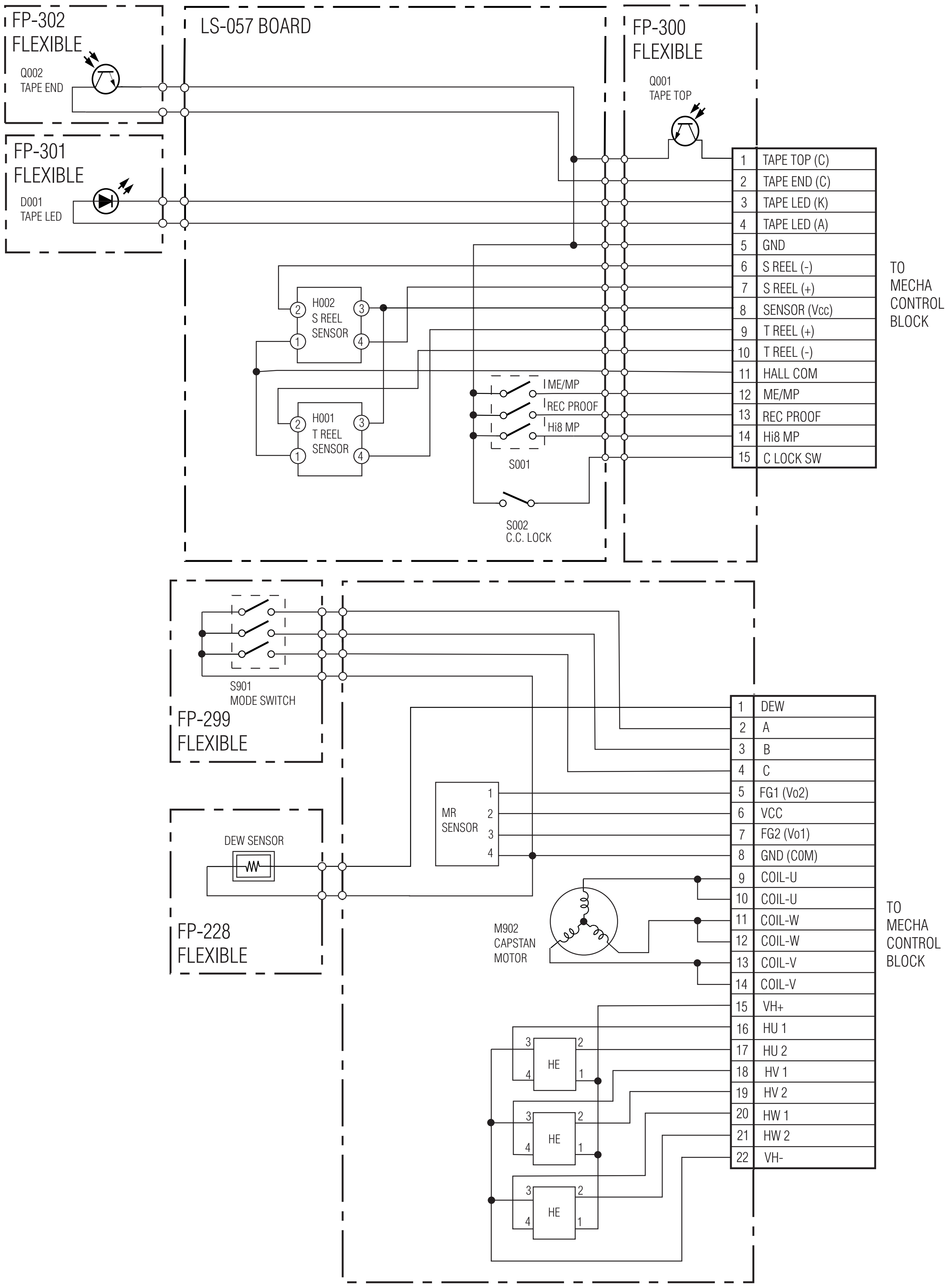
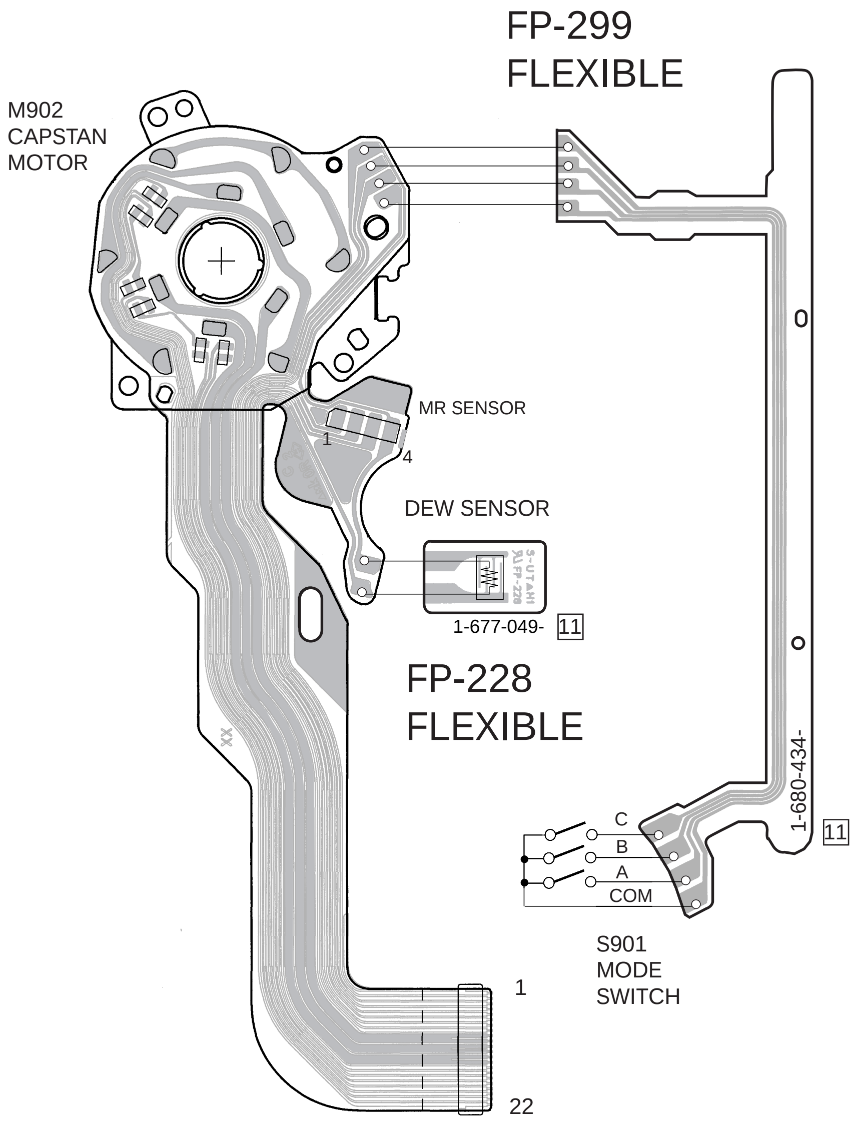
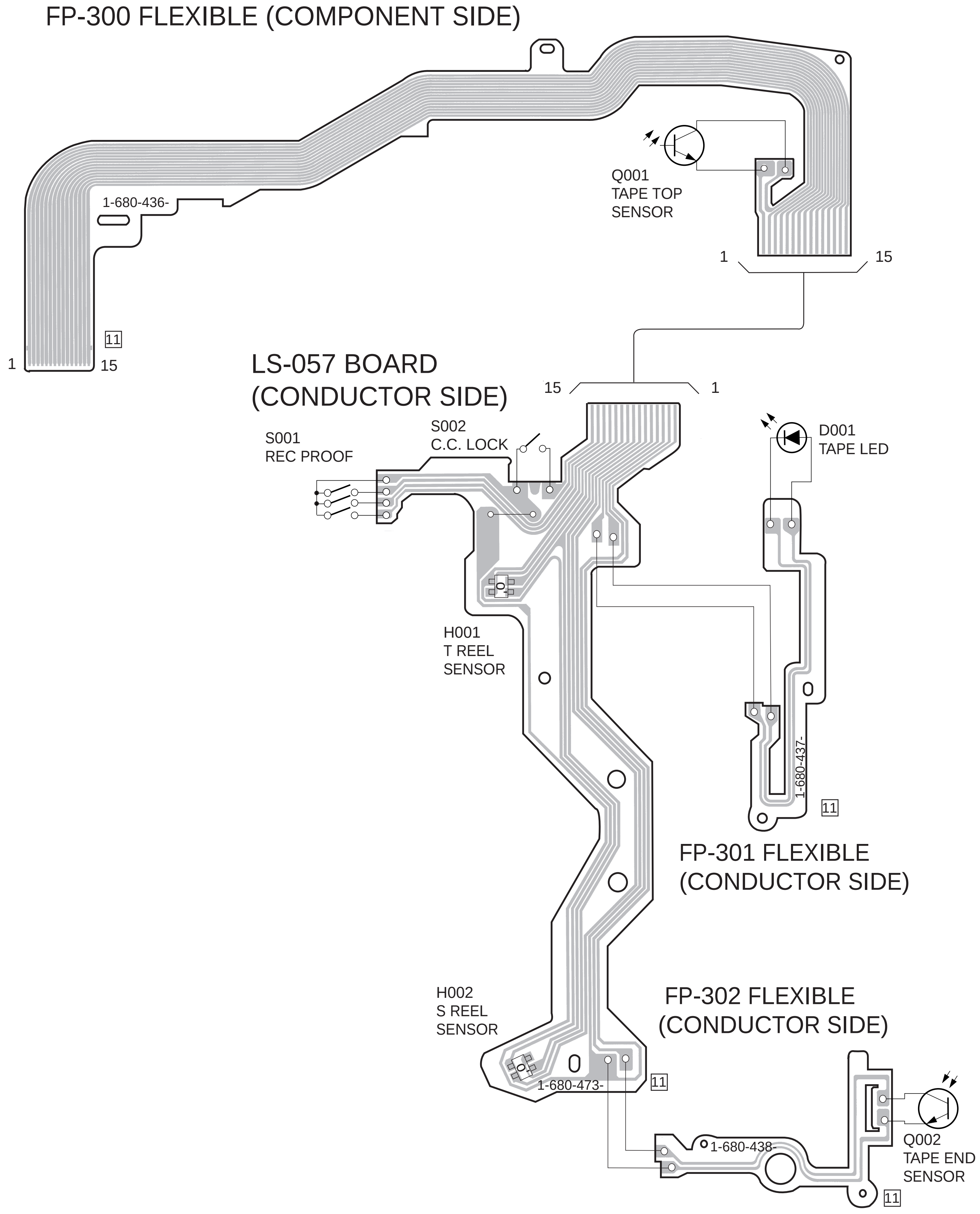
868

Ref. No.	Part No.	Description	Remarks
851	3-065-920-01	ARM, HC DRIVE	
852	3-065-913-01	GEAR (4), LD	
853	3-065-914-01	SHEET, COVER	
854	3-065-917-01	GEAR (1), CAM RELAY	
855	3-065-934-01	HLW CUT 0.98X3X0.25	
856	3-065-915-01	GEAR (1), CAM	
857	3-065-878-01	PLATE (S), GUIDE LOCK	
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	
859	A-7096-413-A	GEAR (S) ASSY, GUIDE	
860	7-624-101-04	STOP RING 1.2 (E TYPE)	
861	A-7096-412-A	GEAR (T) ASSY, GUIDE	
862	X-3951-307-1	PLATE ASSY, M SLIDE	
863	X-3951-305-1	ARM ASSY, LS	
864	3-065-901-01	ROLLER, LS ARM	
865	3-065-916-01	GEAR (2), CAM	
866	3-065-919-01	ARM, T1 LIMITTER	
867	X-3951-308-1	ARM ASSY, GL	
868	X-3951-300-1	CHASSIS ASSY, MECHANICAL	

7. Printed Wiring Boards and Schematic Diagrams


FP-302
FLEXIBLE
Q002
TAPE END
FP-301
FLEXIBLE
D001
TAPE LED
LS-057 BOARD
FP-300
FLEXIBLE
Q001
TAPE TOP
H002
S REEL
SENSOR
H001
T REEL
SENSOR
ME/MP
REC PROOF
Hi8 MP
S001
S002
C.C. LOCK
1 TAPE TOP (C)
2 TAPE END (C)
3 TAPE LED (K)
4 TAPE LED (A)
5 GND
6 S REEL (-)
7 S REEL (+)
8 SENSOR (Vcc)
9 T REEL (+)
10 T REEL (-)
11 HALL COM
12 ME/MP
13 REC PROOF
14 Hi8 MP
15 C LOCK SW
TO
MECHA
CONTROL
BLOCK
S901
MODE SWITCH
FP-299
FLEXIBLE
DEW SENSOR
FP-228
FLEXIBLE
MR
SENSOR
M902
CAPSTAN
MOTOR
HE
HE
HE
1 DEW
2 A
3 B
4 C
5 FG1 (Vo2)
6 VCC
7 FG2 (Vo1)
8 GND (COM)
9 COIL-U
10 COIL-U
11 COIL-W
12 COIL-W
13 COIL-V
14 COIL-V
15 VH+
16 HU 1
17 HU 2
18 HV 1
19 HV 2
20 HW 1
21 HW 2
22 VH-
TO
MECHA
CONTROL
BLOCK


FP-299
FLEXIBLE
M902
CAPSTAN
MOTOR
MR SENSOR
1
4
DEW SENSOR
1-677-049-
11
FP-228
FLEXIBLE
1-680-434-
11
C
B
A
COM
S901
MODE
SWITCH
1
22


FP-300 FLEXIBLE (COMPONENT SIDE)
1-680-436-
Q001
TAPE TOP
SENSOR
1
15
11
1
15
LS-057 BOARD
(CONDUCTOR SIDE)
15
1
S001
REC PROOF
S002
C.C. LOCK
D001
TAPE LED
H001
T REEL
SENSOR
1-680-437-
11
FP-301 FLEXIBLE
(CONDUCTOR SIDE)
H002
S REEL
SENSOR
FP-302 FLEXIBLE
(CONDUCTOR SIDE)
1-680-473-
11
1-680-438-
Q002
TAPE END
SENSOR
11

8mm Video MECHANICAL ADJUSTMENT MANUAL IX

9-929-861-11

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